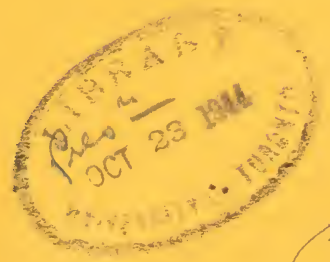
ENGINEERING SOCIETY
UNIVERSITY of TORONTO



1944

TRANSACTIONS AND YEAR BOOK

The Engineering Institute of Canada

FOUNDED 1887

The Engineering Institute of Canada is a Dominion wide organization embracing engineers in all sections of the profession. It operates through twenty-five branches in the main centres of Canada.

It publishes the Engineering Journal, a monthly technical journal, and works through the medium of its Council and many committees. One of these deals with the problems of the young engineer, in which the Institute is vitally interested.

In four provinces the Institute has co-operative agreements with the local provincial associations of professional engineers, providing for common membership.

In Toronto there is an active branch of the Institute, founded in 1906, which meets regularly in winter months. Associated with it is a Junior Section for all engineers up to the age of thirty-five. Undergraduate engineers are welcome at all meetings.

Student Prizes

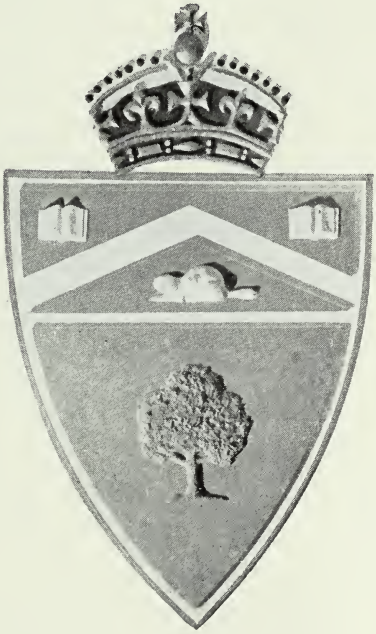
The Institute awards annually a number of valuable prizes for students. Some of these are open to all students, others only to members of the Institute, including Student Members.

General Secretary,
L. AUSTIN WRIGHT,
2050 Mansfield St.,
Montreal, Que.

THE ENGINEERING INSTITUTE OF CANADA FOUNDED 1887

TORONTO BRANCH:
Secretary-Treasurer,
S. H. DEJONG
Electrical Building,
University of Toronto.

Transactions
and
Year Book
1944



Engineering Society

THE UNIVERSITY OF TORONTO

Roll of Service

The Roll of Service compiled for the current edition of the *Transactions and Year Book* includes those of the Class of 4T3 who have joined the Active Forces.

To maintain an up-to-date Roll has been an impossible task and doubtless there are many omissions, for which we ask forgiveness.

We wish to acknowledge the very kind co-operation of the Record's Office of the University of Toronto in making this compilation possible. To prevent further omissions, we would be very appreciative if men on active service, or their families, would keep in touch with the Record's Office.

CASUALTIES

AGNEW, R. M.	**Killed in action overseas, February 11th, 1943.**
ANDERSON, R. B., B.A.Sc., '34	**Killed in motorcycle accident in British Columbia, August 25th, 1943.**
BLAIR, J. H., B.A.Sc., '42	**Died accidentally at Debert, N.S., June 4th, 1943.**
CAMPBELL, W. F.	**Missing after air operations overseas, January 7th, 1944.**
CLARK, D. C. W.	**Missing after air operations overseas, September 21st, 1943.**
DOHERTY, L. A.	**Missing after air operations overseas, January 12th, 1943.**
DURBIN, L.	**Missing in action, September 23rd, 1943.**
GRIFFIN, W. M. R.	**Officially listed as killed after air operations, November 26th, 1942.**
HARRIS, W. P.	**Killed in aeroplane accident in Manitoba, November 6th, 1943.**
HERTZBERG, C. S. L. Diploma 1905	**Died in India on active service, January 10th, 1944.**
McLAUGHLIN, W. G.	**Killed on active service overseas, March 10th, 1943.**
McMILLAN, J. P. B.A.Sc., '37	**Missing in action, July, 1943.**
NEWMAN, J. R.	**Missing after air operations overseas, December 1, 1943.**
PRICE, J. P. Diploma 1941 in Aerial Navigation	**Believed killed after air operations off the Florida coast, May 17th, 1943.**
RICHARDS, G. C.	**Killed in action overseas, October 18th, 1943.**
RIGLEY, R. C.	**Missing at sea on the Destroyer St. Croix, September, 1943.**
RITCH, A. F. G.	**Presumed dead September 11th, 1943, after air operations overseas.**
WALSH, W. M.	**Killed in automobile accident near Gravenhurst, November 6th, 1943.**
WISMER, F. L. S.	**Presumed dead after air operations overseas, October, 1943.**
WYMAN, N. H. C.	**Died in hospital in Toronto, April 23rd, 1943.**
YOUNG, J. M.	**Missing, believed killed in flying accident near Gander Bay, Nfld., September 4th, 1943.**

Roll of Service

Allemang, R. M. ..... **Lieut., R.C.O.C.**
Archibald, H. E. ..... **2nd Lieut., R.C.E.**
Asselstine, R. R. ..... **2nd Lieut., R.C.O.C., O.M.E.**
Aykroyd, M. J. ..... **Sub Lieut., R.C.N.V.R.**
Bessant, W. E. ..... **Pilot Officer, R.C.A.F.**
Biggs, G. L. S. ..... **Pilot Officer, R.C.A.F.**
Bingham, J. K. ..... **Lieut., R.C.E.**
Bland, W. ..... **Lieut., R.C.O.C.**
Boland, O. B. ..... **Lieut., R.C.E.**
Brennan, J. T. ..... **Lieut. R.C.O.C.**
Brooks, R. R. ..... **Sub Lieut., R.C.N.V.R.**
Chaput, U. J. ..... **Pilot Officer, R.C.A.F.**
Cheesman, W. J. ..... **Sub Lieut., R.C.N.V.R.**
Christilaw, T. N. ..... **2nd Lieut., R.C.O.C.**
Collinson, J. F.W. ..... **2nd Lieut., R.C.E.**
Dandeno, P. L. ..... **Sub Lieut., R.C.N.V.R.**
Darling, D. G. ..... **Sub Lieut., R.C.N.V.R.**
Davidson, G. E. ..... **2nd Lieut., R.C.O.C.**
Davis, H. F. R. ..... **Lieut., R.C.E.**
Diack, J. A. G. ..... **Pilot Officer, R.C.A.F.**
Dick, B. O. ..... **2nd Lieut., R.C.O.C.**
Dickie, J. N. ..... **Lieut., R.C.E.**
Doidge, E. C. ..... **Lieut.**
Douglas, M. W. ..... **Lieut., R.C.E.**
Duckworth, D. H. ..... **Sub Lieut., R.C.N.V.R.**
Duncan, W. T. E. ..... **Lieut., R.C.O.C.**
Dyke, J. M. ..... **Sub Lieut., R.C.N.V.R. (E)**
Farintosh, H. E. ..... **Sub Lieut., R.C.N.V.R.**
Featherstone, D. L. ..... **Lieut., R.C.E.**
Ferguson, J. M. ..... **Lieut., R.C.E.**
Forrester, J. S. ..... **Pilot Officer, R.C.A.F.**
Giovanetti, J. ..... **Lieut., R.C.E.**
Gordon, J. B. ..... **Lieut., R.C.E.**
Gordon, J. P. G. ..... **Lieut., R.C.O.C.**

Roll of Service

Gow, W. A. ..... 2nd Lieut., R.C.E.
Grosskurth, D. E. R. Sub Lieut., R.C.N.V.R.
Hamilton, J. ..... 2nd Lieut., R.C.E.
Hamlin, D. L. B. ..... 2nd Lieut., R.C.E.
Harrison, E. P. ..... 2nd Lieut., R.C.E.
Heffernan, G. R. ..... Lieut., R.C.E.
Henderson, J. C. ..... 2nd Lieut., R.C.O.C.
Henry, J. H. ..... Sub Lieut., R.C.N.V.R.
Hipwell, F. O. ..... 2nd Lieut., R.C.O.C.
Huckle, J. G. H. ..... Pilot Officer, R.C.A.F.
Hunton, J. K. ..... Sub Lieut. R.C.N.V.R.

Iglesias, J. H. ..... Lieut., R.C.E.
Inkster, W. J. W. ..... Sub Lieut. R.C.N.V.R.
Isbister, D. H. ..... Lieut., R.C.O.C.
Isbister, F. D. ..... 2nd Lieut., R.C.E.
Johnson, B. T. ..... 2nd Lieut., Chem. Warfare Gen. List
Kellam, F. W. ..... 2nd Lieut., R.C.E.
Kennedy, A. P. ..... Pilot Officer, R.C.A.F.

Knelman, F. H. ..... Lieut., R.C.E.
Lamont, A. G W. ..... Sub Lieut., R.C.N.V.R.
Laver, E. W. ..... Lieut. R.C.O.C.
Lewarne, R. F. ..... Lieut., R.C.E.
Love, J. G. ..... Lieut., R.C.E.
Lucas, J. G. ..... Sub Lieut., RC.N.V.R.
McChesney, D. J. ..... Lieut., R.C.O.C., O.M.E.
McCrodan, P.B. ..... Lieut., R.C.E.

McKechnie, J. A. ..... Sub Lieut., R.C.N.V.R.
McLinden, J. K. F. ..... Pilot Officer, R.C.A.F.
MacVannel, D. P. ..... Sub Lieut., R.C.N.V.R. (E)
Macklin, H. L. ..... 2nd Lieut., R.C.E.
Martin, R. C. ..... Sub Lieut., R.C.N.V.R.
Misener, W. S. ..... Pilot Officer, R.C.A.F.
Mitchell, J. B. ..... 2nd Lieut., R.C.O.C.
Moeser, W. A. ..... Sub Lieut., R.C.N.V.R.

Roll of Service

Morgan, A. W.	Lieut., R.C.E.
Muller, R. A.	Sub Lieut., R.C.N.V.R.
Naylor, R. W.	Pilot Officer, R.C.A.F.
Neame, R. H.	Lieut., R.C.E.
Near, F. M.	2nd Lieut., R.C.E.
O'Donnel, K.	2nd Lieut., R.C.E.
Orr, L. W.	Pilot Officer, R.C.A.F.
Page, H. V.	2nd Lieut., O.T.C.
Parr, J. V.	Sub Lieut., R.C.N.V.R.
Pepino, L. F. C.	Lieut., R.C.O.C., O.M.E.
Phillips, H. A.	Lieut., R.C.O.C., O.M.E.
Pile, R. K.	Lieut., RC.O.C.
Plaxton, J. A.	Sub Lieut., R.C.N.V.R.
Prentice, R. A.	Lieut., R.C.E.
Pritzher, M.	2nd Lieut., R.C.O.C., O.M.E.
Quittenton, R. C.	Lieut., R.C.E.
Ray, L. W.	2nd Lieut.
Rostron, D. W.	2nd Lieut., R.C.E.
Shand, F. P.	2nd Lieut., R.C.O.C., O.M.E.
Shires, J. R.	Lieut., R.C.O.C.
Small, W. D.	2nd Lieut., R.C.O.C.
Smith, P. D.	Sub Lieut., R.C.N.V.R.
Smith, C. H. M.	Lieut., R.C.E.
Telford, R. B.	Sub Lieut.,R.C.N.V.R.
Thomas, A. L.	R.C.O.C.
Tidy, D. J.	Lieut., R.C.O.C.
Tod, J. A.	2nd Lieut., R.C.E.
Turner, O. L.	2nd Lieut., R.C.A.
Vale, R. E.	Pilot Officer, R.C.A.F.
Vallance, J. M.	Lieut., R.C.O.C.
Webb, J. H. E.	Pilot Officer, R.C.A.F.
Willmot, R. S.	R.C.O.C., O.M.E.
Workman, G. H.	Lieut., R.C.E.

W. BRADLEY

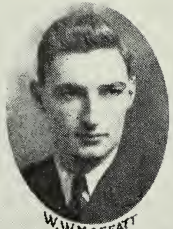
TRANSACTIONS EDITOR

M. ALLOWAY

ASSISTANT EDITOR

H. W. PETERSON

EDITOR



W. W. MOFFATT

ASSISTANT EDITOR

I. R. CURRIE

BUSINESS MANAGER

R. CLARÉ

ASST. BUSINESS MANAGER

BOARD OF EDITORS TRANSACTIONS AND YEAR BOOK

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1943-1944

P. S. CROSS

PHOTOGRAPHIC EDITOR

J. D. ABELL

DIRECTOR OF PUBLICATIONS AND PUBLICITY

J. NORTHWOOD

SPORTS EDITOR

W. HENRY

TORONTONENSIS REP.

A. G. MOFFATT

TORONTONENSIS REP.

TRANSACTIONS *and* YEAR BOOK
of the
University of Toronto Engineering Society

No. 57 JUNE, 1944

EDITORIAL

We are pleased to present to the Faculty of Applied Science and Engineering the 1944 issue of *Transactions and Year Book*. We have attempted to make some changes in the book although admittedly the initial plans were much more elaborate than the finished product.

This space provides an admirable opportunity to express our thanks and gratitude to the members of the Board of Editors for the efforts they have put forth; and also to those others who have helped us out from time to time.

An editorial also provides the privilege of attempting, in some small measure, to present the thoughts of our own Society. These thoughts are directed especially to the Class of 4T4 but it is

hoped that they will also merit the consideration of the other years.

We, the Class of 4T4, are leaving these halls for various destinies. It is our fervent hope that each one of us may attain his objective. Whatever our goal may be, there are several things which we must all remember. First and foremost let us not forget that we are Sons of the University of Toronto and of S.P.S.—and remembering this let us retain that spirit which has carried us through the last four years.

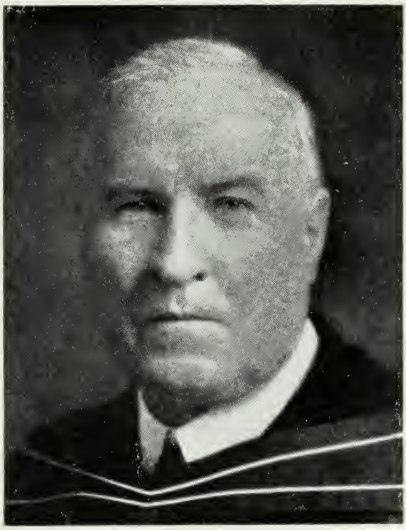
We are emerging into a world which, to quote a hackneyed phrase "is a perilous and unstable one". But is this really a fact? Was not Life ever a disastrous journey on which to embark? True the conditions of today appear rather trying and in this case appearances are not altogether deceiving. But on the other hand these conditions are a challenge to our virility. So let us accept this challenge.

Our responsibilities may be classified into two domains, our duty to our fellow man and our responsibility to our own honor. These are really interchangeable and merge one into the other. Your responsibility to yourself is a matter apart, but our duty to our fellow man, our country, we all must share. We are fighting a mighty battle in the world today. Why? It is an amazing fact that many of us do not know why. It is easy enough to say that we are fighting to preserve the ideals of a Democratic Society. But how many of us fully understand what is meant by Democracy.

Just as it is possible for an individual to deteriorate through the lack of proper sense of ethics, honor and self discipline, so can the entire nation and the government which rules it, revert to a type of rule which is hateful to our minds. There is one way and one way only to combat this disease. Let us not criticize too strongly, for any fool can be a critic but if we must be critical let us be sure that we have a suggestion to offer. This means that we must go out into our world prepared to take our share of the load, and it implies that each and every one of us must take an intelligent and vociferous interest in the affairs of our National Democracy.

H. W. Peterson.

A Message From the President



To the Graduating Class of 1944:

Your graduation from this University is an important milestone on the journey of your life, but it points onward to continued progress. The University congratulates you, and wishes you a full measure of material success in your chosen career and of that higher success which comes from an enriched personality and an ever-widening sphere of beneficent influence.

I know that you will not forget your Alma Mater and that your deep loyalty to "The Old School" will lead you on to promote the usefulness and efficiency of the University as a whole. Join the Alumni Association and keep in touch with the work of the Faculty.

Into what kind of world will you enter? It probably will not be an easy and comfortable world; it will be a world in process of readjustment and that process is usually difficult, but it will be a world that needs you. There will be an opportunity of helping to

rebuild your country and indeed the whole world; in any case there will be plenty of hard work in a poorer world.

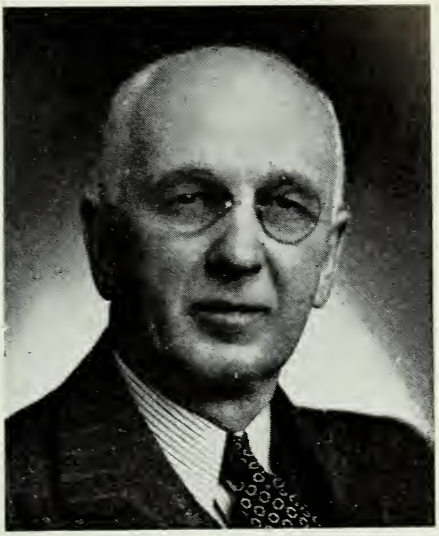
The war has demonstrated the need for the trained and disciplined man, especially for the trained scientist; it has been a war of applied science. The tasks of peace will equally require the engineer. Engineering is "the art of organizing and directing men, and of controlling the forces and materials of nature for the benefit of the human race". This description expresses the countless services rendered to mankind by modern engineering. Indeed, engineering has always been a bulwark of civilization.

The Faculty of Engineering is looking forward to improving its curriculum, to enlarging the scope of its work (e.g. in aeronautical engineering) and to adding to its physical accommodation and equipment; but it will also seek to broaden the outlook and widen the education of its students. Honorable and trustworthy character is basic. The engineer will not mechanize the human soul; he will remember that there is more to life than creative comforts. It has been well said by a great engineer, "We need a new balance of values, a new order of ideals, a new standard of happiness". It is really man that matters. We may use machines to assist him, but man must remain the master, the machine must remain the servant.

I wish for you abundance of work and joy in doing it. Your training has been ideal for citizenship, both in peace and in war. Take a lead in your community both in doing things that are needed and in remedying things that are wrong. Give to your country of your brains, your courage, your endurance, your integrity.

H. J. Cody,
President.

This Year and Beyond



SCHOOLMEN:

As the session draws to a close one cannot refrain from comforting, if sobering, reflection on what has gone by during the past year. It has for most of those in our academic family been a year of faithful work and of modest diversions consonant with the times. We could not and would not be unmindful of the grave discomforts and dangers of many and the coming sacrifices of still more. What has been achieved has therefore been realized in an atmosphere of self discipline and personal responsibility.

In the development of young men this can eventually bring nothing but good. Intellectual and moral stature grow as difficulties are surmounted. What toughness of human fibre and strength of spirit stands forth in that noble body of Chinese students, hounded through seven years of war, driven from their universities and painfully dragging themselves along the roads and trails for hundreds, even thousands, of miles inland to take up again the tattered shreds of their training!

Thanks largely to others, we have been spared such privations. Our academic routine has been but little disturbed. The Government of the country has wisely permitted competent students to continue their studies in order that they might better serve the national interest in war and in the years that come after it. Grave dislocations of higher education have occurred in other lands for one reason or another and a staggering price will be paid for it.

And yet, strangely enough, without formal acceleration of science courses in Canada, we have provided all the technical personnel required for the armed forces and war industry and have achieved a per capita industrial production second to no nation in the world. That is a circumstance for which we ought to be thankful.

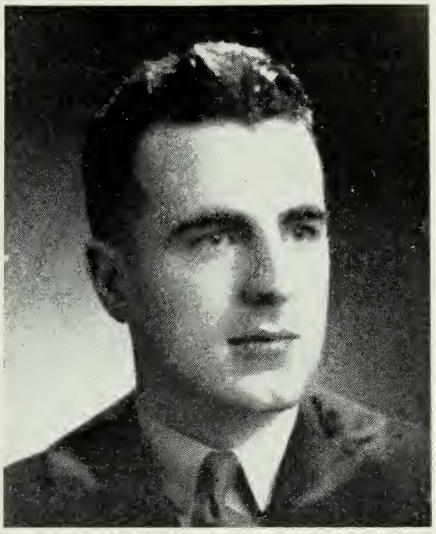
One can but regret that so much time and energy must be devoted to the waging of war at one level or another. A tougher democracy, unsoftened by pacifism, and less devoted to comfort and diversion, would have secured for the students of today an opportunity to pursue their tasks and fashion their futures in a less troubled atmosphere. The work confronting the young engineer would have been more constructive and less reconstructive. There would have been less violence and more orderly advance.

The dislocated present will nevertheless have served some useful purpose if it brings conviction to the young engineer that his principal role in life is enlightened citizenship. It is good to be a clever and resourceful engineer, but that ought not to be one's sole objective. No man can live a satisfying life without an effective contribution to the upbuilding of his community or the safeguarding of his country. John Smeaton, one of the greatest of the eighteenth century engineers, well observed that "the abilities of the individual are a debt due to the common stock of public well-being". If he does nothing to discharge that debt he remains very much a debtor.

Amongst the clear trends now observable in engineering education none is so pronounced as that towards a greater liberalization of engineering curricula. So far has this gone that leaders of educational thought in the United States believe that upwards of twenty per cent of the time of a four-year engineering course should be devoted to humanistic-social studies, not including "tool" subjects, such as Business, Accountancy, Management, or Law. The whole object of this is to fit a young engineering graduate to take his place more quickly and more comfortably amongst other educated men in the assumption of responsibility for maintaining our democratic institutions and a cultivated and humane society.

In this great movement the University of Toronto will not be found lagging. Already, steps have been taken to provide for the appreciative and conscientious student a means of broadening and liberalizing his outlook without subtracting from the essential soundness of his technical training. That is something to which the student of the future may, I think, well look forward with pleasant anticipation. C. R. Young, *Dean.*

The President's Message



The executive this year upon assuming responsibility on March 31st, 1943, began an extensive programme to carry on the good work inaugurated by the executive last year. The excellent financial condition in which the Society was turned over to us insured a reasonable degree of security in our financial affairs and has permitted a number of innovations which were felt by all our members.

The main theme was to adjust the calendar of the Engineering Society to harmonize with the conditions that now exist. In other words our programme was influenced and elevated to wartime conditions.

The first and I feel a necessary innovation, was the Freshmen Reception Programme. This consisted of three phases. The first of which was a welcoming address to the class of 4T7. This was followed by an initiation at Varsity Field. A reception dance introduced the new schoolmen to the social life of School. The last phase was a councillor programme composed of senior students.

This group not only advised but also helped the freshmen with university, school and curricula problems. The whole programme was innovated in order to welcome, initiate, and advise the members of the class of 4T7.

The School Dinner was somewhat restricted by rationing and service help problems. However, the dinner was up to the same standards as in the past. The main and only speaker was the Hon. George Drew, K.C., Premier of Ontario. I might add that it was probably the shortest School Dinner of fifty-four years' standing. A change, I think, and liked by all.

The School At-Home was informal,—a wartime necessity. The decorations and music were of the best. It, also, was a grand affair.

School Nite was the regular dance and revue affair. The revue, held at the Museum Theatre, was under the guidance of Jim Pickard, and was the crowning highlight of the evening. Jim deserves many handshakes for his excellent work.

The Freshmen Reception Dance, the School Dinner, and School Nite committees which were under the guidance of Art Gorman, (First Vice-President) did excellent work. Art did a wonderful job and it was through his wise councilling and leadership that the social functions of School were so successful this year. His work has certainly left a high mark for next year's Vice-President to attain.

Again, I stress that this year was one for many innovations. Open House, which made it possible for the parents and friends of fourth year mechanical, civil and electrical students to attend and see the work of the graduating students which they performed in their respective laboratories in conjunction with their course. This year's introduction was an experiment and because of its success, plans are to be made for an Open House for all departments of engineering. Norm Bales and his committee were responsible for a successful evening enjoyed by all.

The Engineering Society's paper, the *Toike Oike* was also renovated. Under the leadership of Bud Smith, the editor, there was introduced the *Toike Oike Quarterly.* It is hoped that this paper will be a means whereby the students and faculty members of Applied Science and Engineering will be able to read about new engineering developments. Here, not only students but also those faculty members who are doing important research work will be able to describe their work to others.

Lastly, you will notice the new ideas and re-organization of the *Transactions and Year Book,* School's magazine. Harry Peterson, its editor-in-chief, has been the influence for its new developments.

The club chairmen and year presidents have administered their respective offices in a highly successful manner. I am sure that the students appreciate their good work.

Congratulations are in order for Pete Aykroyd, who was assisted by Miss Lowry and Miss Sands, for administering the Supply Department in a most business-like manner.

Bob Moore, the treasurer; Jack Abell, Director of Publications and Publicity; Murray McCulloch, the secretary, have worked quietly and unselfishly to carry out their duties. Many thanks for their kind co-operation.

The Athletic Association, under the capable direction of Brian White, is trying very hard to shelter the T. A. Reed Trophy for School once again.

Buzz Crosby in conjunction with the club chairmen operated a good programme for our General Meetings. We were very fortunate to have Convocation Hall for this purpose and I extend my appreciation to Dr. Cody, Dean Young and Col. LePan for their co-operation in securing it for us.

At this time I would like to thank the members of the Engineering Society Executive Committee for their fine co-operation. I would also like to thank Dean Young, Professors W. J. T. Wright and W. G. McIntosh for their wise counsel on numerous occasions. The fine co-operation of this year's executive with the Faculty Council has carried the Society over the rough spots during the year.

In closing, I might say that I consider it a great privilege to have been your president. I wish the best of luck to next year's president and his incoming executive and hope that they have a successful and active term of office.

JACK WARD.

Transactions

1944

CONTENTS

Engineering Society

THE UNIVERSITY OF TORONTO

Engineering Society Notes

October 18th—

Mr. Neild of the Toronto Transportation Commission brought a very interesting technicolor film entitled, "40,000,000 Miles a Year", to the first Engineering Society meeting. The film featured the mechanical highlights of the new type cars, their operation and maintenance, and the technical training of the Toronto Transportation Commission personnel.

November 16th—

"Gliders and Gliding" was the topic of discussion for meeting No. 2, with Mr. W. Czerwinski of Canadian Wooden Aircraft delivering the lecture and illustrating it with slides of performance graphs and various sailplane models.

December 9th—

The members of the Engineering Society had at this meeting the privilege of seeing a technicolour film covering in detail the production of steel at the Atlas Steel Corporation in Welland. The Society is indebted to Mr. Birke of this firm for the showing of such a fine film.

January 25th—

By all means the most outstanding talk of this year's series was delivered at this meeting by Professor H. E. T. Haultain, Professor Emeritus of the Mining Department. His topic was "Ourselves", being an introduction to broader "Field of Training the Subconscious Mind".

February 17th—

This was the occasion of the annual joint meeting of The Engineering Institute of Canada and the Engineering Society. As this was the Annual Students' Night of the Engineering Institute five student papers were presented and the subsequent prizes announced.

February 29th—

This meeting took the form of the annual "Election" campaign at which the nominees for the various offices presented themselves and their claims as to why they should be elected to their prospective positions.

For the first time, this year the Engineering Society has been holding its general meetings in Convocation Hall. This has been found to be a very great improvement over the over-crowded lecture rooms as in previous years. It is therefore the sincere hope of the Engineering Society that it may continue to carry on its meetings in this hall throughout the years that follow.

Glass—A Structural Material

By

H. D. McNIVEN

4th Year—1

Glass is a structural material. This does not refer to glass blocks, which are now being used in the modern house and hospital building as these are merely for decoration. What is meant by glass as a structural material is glass, which takes load and is designed to do so.

Before glass in its engineering applications can be fully appreciated, the mechanical properties of the glass must be fully understood. The mechanical properties of glass are complex and therefore the study must be a detailed one.

The tensile strength of glass fibres upon cooling is tremendous, usually in excess of 2,000,000 p.s.i., the strongest substance known to man. The excess drops very rapidly, however, especially if touched by human hands. This drop in strength is due to surface flaws. These flaws cannot be seen by the human eye, cannot be seen with a microscope and so far no method has been developed to remove them. The working strength of glass in tension is 8-10,000 p.s.i. The compressive strength of glass is high 100,000-200,000 p.s.i. and this is utilized as much as possible when glass is designed to take load. The sheer strength of glass is the same as its tensile strength.

Glass is often termed the "perfect elastic". Even when glass fails it shows no signs of elastic deformation. The modulus of elasticity of glass is 8-10,000,000 p.s.i. and Poisson's ratio is 0.20 to 0.30.

Glass is very light. The density of glass is 2.5 to 3.5. This means very little but when it is compared with the density of steel which is 7.8 the value becomes more significant.

There are many kinds of glass and fortunately all these different kinds have practically the same strength. When a glass is to be chosen to suit a particular job it is not chosen according to its strength, therefore, but according to its coeff. of expansion. The coeffs. of expansion of glass are as follows:

Vitreous silica	5×10^{7}	cm/cm/°C
96% Silica glass	8	" " " "
Pyrex	32	" " " "
Barosilicates	60	" " " "
Heavy Lead flint	80	" " " "
Plate and window glass	90	" " " "
Soft lime	100	" " " "

In the manufacture of glass, the glass must be cooled before it can be used. Very often in this cooling, internal stresses are set up. It can easily be seen that if these internal stresses are tensile stresses it will require a very light load to fail the specimen. Something, therefore, must be done to overcome these internal stresses. Something has been. Prestressed glass not only does away with the detrimental internal stresses but contains other internal stresses which increase greatly the strength of the glass.

I will deal very briefly with the principles of manufacture of prestressed glass. First the glass is heated, thus elongated, and then the outside portions are quickly cooled, usually by jets of cool air. The outer fibres of the glass quickly contract and as glass is very viscous they solidify very rapidly. The outside layer in the meantime is still hot, still elongated. It cools slowly and as it does it contracts. The outside fibres are drawn together and put in compression. The final prestressed glass, therefore, is in the form of a sandwich, the outside portions of which are in compression, and these enclose a layer in tension. The internal stresses of prestressed glass must be in statical equilibrium. Prestressed glass has two main advantages over ordinary glass.

When it does fail it flies into very small blunt harmless pieces very different from the long sharp pieces of ordinary glass. It is also very much stronger than ordinary plate glass. It is five times as strong in bending as ordinary glass and ten times as resistant to impact.

It is through these advantages of prestressed glass that glass is now being used in engineering applications.

I have divided glass in its engineering applications into two groups:

(i) Glass in Mechanical Parts;
(ii) Glass in Construction.

(i) Glass in Mechanical Parts

Glass piping is the first use of glass in mechanical parts. Glass is especially adaptable to this use for many reasons. It has a low friction drag, it does not corrode and it is very easily cleaned. Internal pressures in glass pipe can now go as high as 150 p.s.i. Most pipe sections are joined by means of metal connectors and gaskets. Glass piping is becoming even more promising, however, with the recent introduction of welding of glass.

Centrifugal pumps are now being made from glass. The shortage of metal due to the war demanded that glass be used for this purpose. Many people predicted that glass would not stand up under the severe conditions under which many pumps

must work. However they were wrong. Thousands today are withstanding the severest conditions that can exist. The volutes, impellers and head plates are all made of glass so that the water comes in contact with no metal whatever. Glass can be made to the same tolerance as metal. As a glass can be chosen with a very low coeff. of expansion the pump may be allowed to run dry, a decided advantage. As glass has a low friction drag these pumps are proving more efficient than the metal ones.

The most unexpected use of glass is its use in making glass springs. It would at first seem impossible that glass could be used for this purpose but on closer study it is found that glass is very suited for this use. It is the perfect elastic. When prestressed glass is used the springs can be made very strong. The most useful quality of the glass however is its great resistance to fatigue. Our specimen after undergoing 8 million deflection cycles in an acid mist showed absolutely no signs of failure. Lightly loaded springs are now being made of glass.

(ii) Glass in Construction.

Many an engineer has spent a lifetime trying to improve the efficiency of a pump, a turbine, or a motor. Little time, however, has been spent in studying the efficiency of structural material. If we use as our criterion the compressive or tensile strength divided by the density, which is reasonable as the dead weight of structures is becoming more important, glass is more efficient than concrete, steel and timber. Glass rates second only to wood in cheapness as a structural material.

So far in construction glass has taken but three forms, glass bricks, glass lenses and glass prisms.

I am not contradicting my first statement when I say that glass bricks do take load. The glass bricks in the modern home take no load but this is not the fault of the brick but the fault of the mortar. The brick can withstand 1200 p.s.i., the mortar only 400 p.s.i. Dr. Palivka, who is the leading authority in glass construction today, has patented a metal connector which is placed between the bricks and which transmits the load directly from one brick to another. As the bearing strength of glass is large these connectors can be small. Whole walls made from glass bricks can now take their full share of the structural load.

Glass lenses are used both in the single unit construction and the multi-unit construction. In the single unit construction the glass lenses are combined with reinforced concrete to form an arch or dome. In the multi-unit construction the lenses are combined with concrete in the form of a slab. The tension in the slab

is taken by a perforated metal sheet bolted on the bottom of the slab. The slab may be either pre-cast or cast in place and are simply raised and laid between purlins. When the roofs of buildings are of either this or the single unit construction huge quantities of sunlight are transmitted into the building. The lenses also tend to disperse the light evenly.

Glass prisms are used also in construction in domes or arches. They are mainly used when decorative results are required. Where close control over light, heat and sound is desired, however, prisms are seldom used.

Glass in engineering applications is merely in its infancy. Its future is very promising. Glass columns may well be made of glass utilizing its high compressive strength. Reinforced glass beams comparable to reinforced concrete beams are quite feasible as glass and metal band well. The roof of the future home may well be the arch or dome mentioned previously. Prestressed glass plates are now being made, which, when used as a wall could withstand any windload which may arise. Glass floors are now being used, as glass has great resistance to wear.

It may be in the not too distant future, therefore, that we may see glass factory buildings, housing glass machinery with glass parts. People may live in glass houses and contrary to the ancient proverb, they probably will be able to throw stones.

Magnesium As An Aircraft Component

by

JACK H. WARD

2nd Year — 1

Before discussing Mg as an aircraft component it is probably best to explain that the metal is useful in the aircraft industry only in the form of its various alloys. This is the case with many, indeed most of the other important metallic elements used in construction. The principal alloys are those containing from 3-107. Aluminium, 1-3.5%, Zinc and 0.1-2.5% Manganese, the remainder being of course Mg. Each of the different percentages combined exhibits a difference in properties, and each alloy is best suited for a definite job. Thus when we refer to Mg. in the course of the next few minutes we shall be referring to the Mg. alloys as a group.

The introduction of Mg. as a structural metal to the greater part of the world's aviation industry has been neither rapid nor easy. There are two main reasons for this slow progress. Firstly, the abundance of Al in this country, in the United States, and on world markets up until the first year of the present war made it unnecessary for aeroplane manufacturers to look for and develop additional structural material, and secondly, the reason that engineers had so often bypassed Mg. before in structural work, the early disadvantages of the metal in both production and construction too nearly equalled the advantages to be gained in its use. While Mg. was not needed—that is, while the supply of Al was taking care of all aviation's needs in most countries—no great efforts were expanded to overcome the initial disadvantages of the metal.

However, one country, in the period from 1933 to 1939, was making extensive use of the metal in its aviation expansion programme. That country was Germany. The common sources of Mg., sea water or brine as obtained from salt deposits, were practically unlimited to German industry as compared with the very restricted supplies of Al and other similar metals—particularly in time of war, for which we know the Germans were definitely preparing. During the six-year period following 1933, Mg. production in Germany was increased to 9 times its original level and it is notable indeed that a great deal of the Germans' overwhelming superiority at the beginning of World War 2 in numbers of aircraft—and often in performance—was due to advanced design made possible by advanced applications of Mg. in construction.

In order to present a truer and less hasty picture of the metal's value we must consider its good and bad properties along with the advantages and disadvantages that Mg. has exhibited in aircraft construction, as compared in most cases with Al, which it most often replaces. Primarily we must take into account the availability of Mg., since ready supplies of any material are a prerequisite to an examination of its importance. That is, no matter how great the advantages of Mg. over Al might be, if there were available only a couple of tons of it to replace 200,000 tons of the Al, the Mg. would not be of much use. However, we find it to be the sixth most abundant metallic element on the earth and, due to recent production discoveries—notably the Pidgeon Process of recovery—the supply of ingot is entirely sufficient. This condition, moreover, is expected to continue and to improve as facilities increase. The bad properties of the metal are chiefly four: (1) A relatively poor corrosion resistance; (2) A wide gap between the yield point and the ultimate strength; (3) A low modulus of elasticity and (4) A difficulty in forming the Mg. sheet. It work hardens very rapidly during this process and thus permits only hot forming, which, of course, requires the dies and tools used to be heated as well. The first of these, the poor corrosion resistance, has recently been effectively overcome by a careful chrome pickling treatment during storage and then by sufficient amounts of primer and paint on the finished product. Discretion in the use of the metal for exposed parts of the aircraft has also aided in effectively checking corrosion. The structural disadvantages—low modulus and wide range between yield and ultimate strength are rapidly being solved by research; and their effect is being minimized by using the metal at points where comparatively small stress occurs. The difficulty in forming has yet to be overcome. It can merely be reduced to a minimum by using the sheet for parts requiring the least amount of forming—such as seats, doors and instrument panels.

The most important property and the most obvious advantage of Mg. in aircraft construction is its lightness. It is almost exactly two-thirds as heavy as Al and may be used in a majority of cases in the same section dimensions as the Al, thus representing a saving in weight of 33⅓% over the Al. Its lightness has made it ideal in all its uses in aircraft since the lessening of weight is so vitally important in increasing speed, range and manoeuverability. Mg. was most prominently responsible for the achievement by aeronautical engineers of their long-sought goal of one horsepower per pound of engine weight. Next in importance is Mg's extreme workability in its solid form. It may be gas or electric welded,

riveted, annealed, or pressed, and can be machined at very high speeds. Important too is the fact that the strength of the Mg. alloys has been constantly improved by experimentation, and is now at a very satisfactory level when coupled with their ability to save weight. At the same time, stress corrosion on sheet Mg. is small and this has enabled its use on the all-important control surfaces, and in airframes. Last of the important advantages is the saving in power and cost of production over Al. In large-scale production of aircraft, as that being carried out at present and on even larger scale as projected for the future—this saving amounts to a very considerable superiority over the Al, which is of course Mg.'s chief running mate and rival.

From this rapid assessment of the properties of the metal and its value in aircraft construction, we see clearly that, although the initial disadvantages of Mg. were considerable, research has done a great deal to make the metal practically indispensible. This merely adds up to the fact that, after all, Mg.'s *real* disadvantage was lack of attention.

The metal has manifold uses in the aircraft engine world. It made its debut as an aircraft engine metal with minor fittings—bearing little stress but saving valuable weight. As the industry built up more experience with the metal, and as technical improvements in working it increases its strength, it was promoted to becoming raw material for such parts as oil pumps and front and rear covers for superchargers. Thus at the present time we find it used in scores of parts in Wright Cyclone and Rolls Royce Merlin engines, to mention only two outstanding names. This by way of illustration that Mg. engine parts are used by the world's best aircraft engine manufacturers—and in these engines, for the world's best aircraft, among them Supermarine's Spitfire fighters, Boeing's Flying Fortresses and DeHaviland's Mosquito fighter-bombers.

Working back from the engine of the plane and not overlooking the fact that many of the latest engines are fitted with nose sections of Mg., a tribute to the increased strength and corrosion resistance of the metal—we find it used for a multitude of important and highly responsible parts of the plane. Certain sections of the airframe itself, depending of course on the type of plane and the actual design characteristics, are fabricated of Mg. As a sheet covering for the frame we find Mg. used on control surfaces, and for flooring, cowling and fairing. Sheet Mg. is widely used for gas and oil tanks, instrument panels, seats and doors as well. Oil pumps and valves, gun turret parts are a few of the applications of the castings and forgings of the metal. In all these many posi-

tions, the Mg. is performing the same primary task—that of saving valuable weight while doing the same job as the material it replaces. The importance of this weight saving in aircraft cannot be overestimated. In no other major mechanical device is performance so dependent on weight considerations. And the value of this performance increases many times in war. Now that our military airplanes are being equipped with armour-plate pilot's seats, bulletproof windshields, and increased armament—all producing a considerable weight increase—it is becoming more and more difficult to secure satisfactory performance from these planes. Thus are Mg.'s many applications being added to constantly as higher values of speed, load, climb and range are sought.

Equally as valuable in an estimation of the metal's worth are the observations and reports of engineers and flight research workers on the ability of Mg. to stand up under actual flying and fighting conditions. Through these observations we have a direct check on any value we have predicted for the metal. We find, first of all, that castings, forgings, and extrusions have been almost 100% satisfactory in combat and transport service as measured over a normal span of aircraft life. Remarkably few service troubles involving them have occurred. Sheet Mg. has proven to be equally as satisfactory at points where not too great abuse or vibration occur. That is, the sheet has come up to standards for oil and gas tanks, fairing, cowling, seats, and similar parts. The majority of the failures in the sheet have been in cases where Mg. was used to replace A1 of the same gauge and, because of its lower ductility and greater sensitivity to vibration, the sheet has not been as satisfactory as expected. Two specific examples are the uses of the metal for flooring and door panelling. The degree of abuse in these cases is high, of course, and further reinforcement will no doubt be necessary.

The effect of gunfire on Mg. parts has also been carefully noted. Mg. does not ignite when hit by incendiary bullets, and the holes caused in it by solid shot are much less ragged—in addition to less "tuliping" of the metal around the bullet hole—than is the case with A1. In the specific case of gasoline tanks it is found that the tanks are more resistant to gunfire when fabricated with Mg because of the fact that the metal does not tulip and prevent the external bullet-proofing rubber from sealing effectively. This experience has been definitely born out by almost universal use of Mg. tanks on the British Spitfire fighters. However, explosive shells are somewhat more destructive in their effect on Mg. as compared with A1.

Further, when all the Mg. parts of a German Junkers 88 and Messerschmidt 110 were examined recently after both had had considerable combat service, it was found that in spite of the fact that impurities in the German alloys were uncontrolled, and the protective coatings inferior, no corrosion failures were observed. All of these observations have been reported since the beginning of 1944 so that we may be certain that this has been a very accurate and up-to-the-minute summary of Mg.'s present value in aircraft construction.

Nor is this true value proven by service experience alone. Concerning air power specifically, and dependent on the type of combat plane involved, the present Mg. requirements alone are estimated at from 0.2 to 1.7 tons / airplane, a percentage by total weight of nearly 10%. Moreover, production of Mg. in 1929 was so small as to be negligible throughout the world, while in 1940 44,000 tons were produced, 70% of that total being German production. In 1943 estimated production was 57,000 tons for the Axis as against 217,000 tons for the Allies. Probably no better evidence could be adduced than that comprised in these latter statistics as to the mutual recognition by the warring factions that the available supply of Mg. will play, and is playing, a very important part in the establishment and maintenance of superiority in air power during the war. Moreover, the commercial prospects for Mg. are particularly bright, dependent as they are upon an apparently sure increase in aircraft use and production—and an ever-widening field of applications of the metal through research and experimentation. *Mg.'s value in weight consideration cannot but increase tremendously as the greater size, range, load capacity, and revenue promised for our future transport aircraft are achieved.*

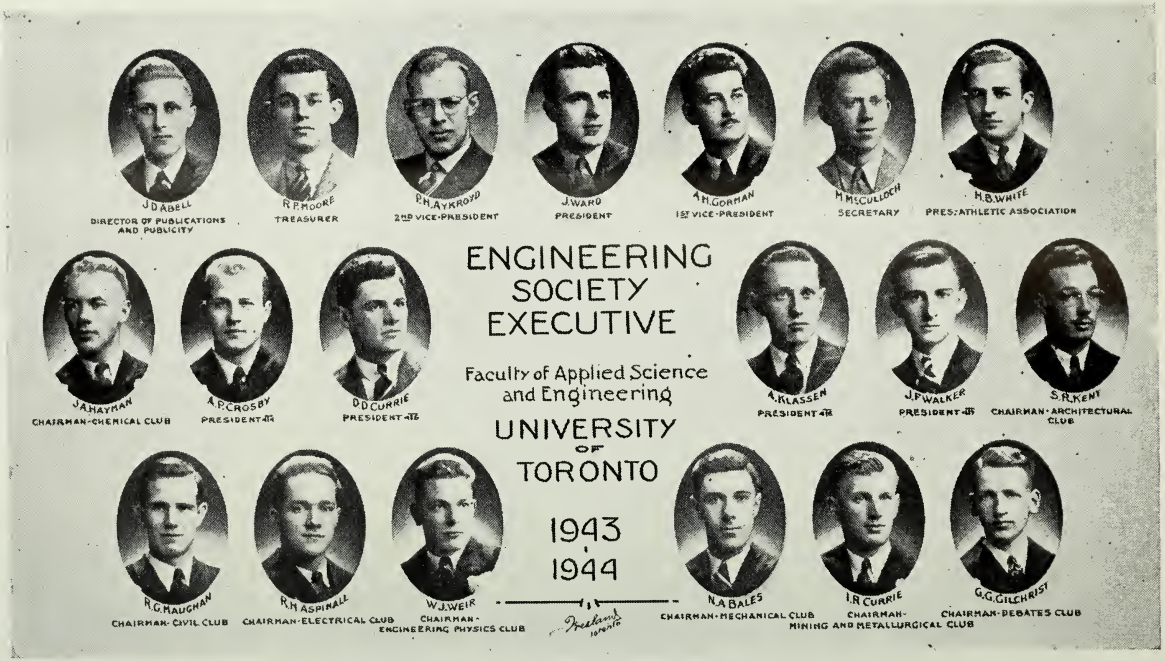
With all this behind us, and ahead in the future, certainly we may say that the remarkable progress accomplished, and to be accomplished, in the design and development of modern aircraft is due in no small measure to the alloys of Mg. as aircraft components.

Year Book

1944

EXECUTIVES, CLUBS,
SOCIAL FUNCTIONS

Engineering Society
THE UNIVERSITY OF TORONTO


J.D.ABELL
DIRECTOR OF PUBLICATIONS AND PUBLICITY
R.P.MOORE
TREASURER
P.H.AYKROYD
2ND VICE-PRESIDENT
J.WARD
PRESIDENT
A.H.GORMAN
1ST VICE-PRESIDENT
H.MCCULLOCH
SECRETARY
H.B.WHITE
PRES: ATHLETIC ASSOCIATION
J.A.HAYMAN
CHAIRMAN-CHEMICAL CLUB
A.P.CROSBY
PRESIDENT-'43
D.D.CURRIE
PRESIDENT-'42
ENGINEERING SOCIETY EXECUTIVE
Faculty of Applied Science and Engineering
UNIVERSITY OF TORONTO
1943
1944
A.KLASSEN
PRESIDENT-'43
J.P.WALKER
PRESIDENT-'45
S.R.KENT
CHAIRMAN-ARCHITECTURAL CLUB
R.G.HAUGHAN
CHAIRMAN-CIVIL CLUB
R.H.ASPINALL
CHAIRMAN-ELECTRICAL CLUB
W.J.WEIR
CHAIRMAN-ENGINEERING PHYSICS CLUB
N.A.BALES
CHAIRMAN-MECHANICAL CLUB
I.R.CURRIE
CHAIRMAN-MINING AND METALLURGICAL CLUB
G.G.GILCHRIST
CHAIRMAN-DEBATES CLUB
Freeland Toronto

Engineering Society - 1944-45

Engineering Society Executive—

President	R. F. Moore
1st Vice-President	J. T. Pickard
2nd Vice-President	A. Klassen
Treasurer	M. McCulloch (Accl.)
Secretary	W. Bruce

Athletic Association Executive—

President	D. Gibson
Vice-President	K. C. Hendricks
Secretary-Treasurer	A. N. Campbell (Accl.)

Executive 4T5—

President	W. Tamblyn
Vice-President	R. L. Hicks
Secretary-Treasurer	C. Eastwood
Athletic Representative	W. J. Brant

Executive 4T6—

President	R. Hunt
Vice-President	Bob Davidson
Secretary-Treasurer	W. L. Booth
Athletic Representative	G. S. Boa

Executive 4T7—

President	J. B. Adams
Vice-President	T. J. Gaffney
Secretary-Treasurer	Miss M. B. Lamont
Athletic Representative	T. L. Hennessy

Club Chairmen—

Civil	R. E. Upper
Mining and Metallurgical	G. B. Gill (Accl.)
Mechanical	L. Elliott
Architectural	H. R. Agnew (Accl.)
Engineering Physics	A. C. McDonald (Accl.)
Industrial Chemical	K. R. Brigham
Electrical	C. S. Morgan
Debates	Miss S. MacDonald

Permanent Executive—

President	J. Ward
Vice-President (2)	J. D. Abell A. H. Gorman
Secretary-Treasurer	M. S. Hannon (Accl.)

Councillors—

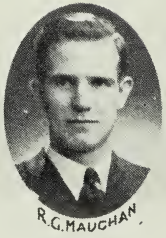
Department 1	R. G. Maughan (Accl.)
Department 2	A. P. Crosby (Accl.)
Department 3	R. Rivers
Department 4	S. R. Kent (Accl.)
Department 5	W. J. Weir (Accl.)
Department 6	J. Hayman (Accl.)
Department 7	R. Aspinall (Accl.)
Department 8	J. A. King (Accl.)

Bronze "S"—

H. Seymour

DEAN C.R. YOUNG
HON VICE-CHAIRMAN

MR. E.W. HEWSON
HON. CHAIRMAN



R.G. MAUGHAN
CHAIRMAN

MR. O. HOLDEN
HON. VICE-CHAIRMAN

W. TAMBLYN
VICE-CHAIRMAN

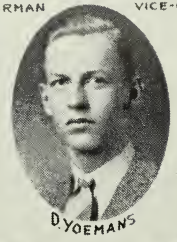
R. WEIR
TREASURER

CIVIL CLUB EXECUTIVE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

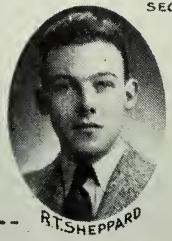
1943-1944



D. YOEMANS
SECRETARY

W.L. BRADLEY
4TH YEAR REP.

J. PICKARD
3RD YEAR REP.



R.T. SHEPPARD
2ND YEAR REP.

W. ALLEN
1ST YEAR REP.

Freeland Toronto

Civil Club

This year the Civil Club got away to an excellent start, with a bang-up Imitation Stag, held at a certain downtown hotel early in October. The sophomores, under the able guidance of one R. Shephard outdid themselves in welcoming the Class of 4T7 into our fold.

In November, a more fitting welcome was accorded to Wing Commander T. R. Loudon, who after three years' leave of absence, returned this year to the University as head of the Department of Civil Engineering. Professor Loudon gave a short talk on aviation, covering well its past, present and future phases.

Again this year, the Civil Club sponsored a Photographic Salon, which was held early in December. Although a little short on quantity, the quality of exhibits was excellent, and the entrants deserve a lot of credit for their fine showing.

On the occasion of the opening of the Salon, a dinner meeting was held at the Hearthstone Tea Rooms. The attendance at this meeting was gratifying, and the talk on "The Uses of Photography in Industry" given by Mr. F. D. Evans of General Engineering proved most interesting.

Straying slightly from the well-worn path of strictly engineering subject, the January meeting illustrated the importance of economics to engineers. At this meeting, Mr. P. Ackerman, Consulting Engineer of Montreal, presented his carefully planned solution for post-war unemployment.

At the time of writing, there is still another meeting to be held. It is difficult to realize that for many of us it will be the very last.

To the incoming executive, I should like to offer my most sincere wishes for many successful meetings next year. To all members of the Club, many thanks for your support. Give it to your new Chairman too.

R. G. Maughan,
Chairman.

C.B.GILL
SECRETARY-TREASURER

G.B.LANGFORD
FACULTY SPONSOR

I.R.CURRIE
CHAIRMAN

W.G.HENRY
VICE-CHAIRMAN

H.G.McLAREN
4TH YEAR MINING REP.

S.CROSS
3RD YEAR MINING REP.

E.W.DAFOE
2ND YEAR MINING REP.

MINING AND METALLURGICAL CLUB EXECUTIVE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1943-1944

Freeland Toronto

J.HOCHBURG
1ST YEAR MINING REP.

J.KING
4TH YEAR METALLURGICAL REP.

D.L.WATSON
3RD YEAR METALLURGICAL REP.

J.W.SHAVER
2ND YEAR METALLURGICAL REP.

R.THOMAS
1ST YEAR METALLURGICAL REP.

Mining and Metallurgical Club

The end of the year is now in sight and last minute rushing seems to be the order of the day. Even this write-up is of the last-minute variety. We look back on the year's activities with mingled regret and satisfaction, regretting that our reduced membership and consequently reduced revenue caused the curtailment of some of our planned activities, but satisfied that the quality of our members and meetings was maintained.

Our Freshman Reception had to be postponed until the first week in November and was a huge success. The freshmen were introduced singly and in small groups to their wiser brethren in the other years in a humorous manner, but the highlights of the evening were the professional entertainment, the bingo game, giving away free prizes, and the gathering of certain cultural groups at some of the quieter places. The meeting was extremely well attended, even including several guests from other departments, and was voted the best opening meeting in recent years.

Our second general meeting was in the form of a dinner at Hart House in the middle of January. The speaker was Professor S. M. Graham of Queen's University who outlined the history of labour unions and indicated the likely relationship between them and the engineer.

The Annual Club Dinner was held at Haddon Hall in the second week of March. The meeting was reasonably well attended considering the increasing pressure before examinations. The speaker was Mr. M. J. Aykroyd, President of the Association of Professional Engineers of Ontario, who outlined to those present the history, principles, and methods of operation of the Association and pointed out the advantage of the young engineer becoming associated with it.

Most of the members have been able to attend the annual meeting of the C.I.M.M., through the kindness of the Faculty, and have been stimulated by coming in contact with the prominent men in the industry at the social functions and the technical sessions and see the advantage of belonging and subscribing to the Institute.

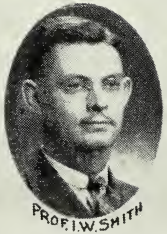
Thanks are due Mr. Cyril Knight and Professors Williams, Pidgeon and Langford, for their interest and efforts on behalf of the Club, and to the representatives and members for their co-operation. It was greatly appreciated.

I. R. Currie,
Chairman.

PROF. R.W. ANGUS
HON. VICE-CHAIRMAN

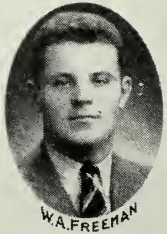
N.A. BALES
CHAIRMAN

DR. K.R. RYBKA
HON. CHAIRMAN

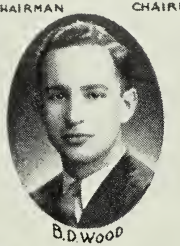


PROF. I.W. SMITH
HON VICE-CHAIRMAN

L.E. ELLIOTT
VICE-CHAIRMAN



W.A. FREEMAN
SECY-TREASURER



B.D. WOOD
4TH YEAR REP.

MECHANICAL CLUB EXECUTIVE

Faculty of Applied Science and Engineering

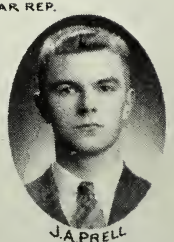
J.F. HADDY
3RD YEAR REP.

W.A. NEALE
2ND YEAR REP.

UNIVERSITY OF TORONTO

1943-1944

Freeland Toronto



J.A. PRELL
1ST YEAR REP.

Mechanical Club

At the time of writing, the annual elections were in full swing, but we must go to press without a preview of next year's executive.

The first meeting was not held until November 9th because a by-election was necessary to replace J. P. Mehrtens, now of the U.S. Marines. A motion picture supplemented by illustrative booklets was sponsored by the Johns-Manville Company and outlined their products and production methods.

Mr. Frank Dowsett, local advertising executive, addressed the Club at an informal supper meeting held at Diana Sweets, December 9th. His topic "Realism vs. Idealism" reviewed many interesting points of present and future developments. "Whitey" Belshaw provided spectacular versatility with piano arrangements of sweet and swing music.

The Canadian General Electric sponsored a fine program on January 18th that illustrated the application of electronics to mass production. A short film depicting the evolution and measurement of colour added to their show. Mr. Jack Ward, fourth year mechanical student, presented an address featuring, "Jet Propulsion".

At the Annual Dinner, held February 21st at the Prince George Hotel, Dr. K. R. Rybka, Honorary Chairman, addressed the Club choosing "An Engineer Reviews Geopolitics" as his subject. A good turnout, a fine speaker and a word from Professor Angus during which he announced his retirement and bid the graduating class "God Speed". Messrs. Belshaw and Simpson provided entertainment.

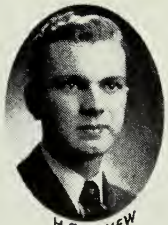
I should like now to extend my sincere thanks to Dr. Rybka for his unestimable counsel and assistance. To the staff and student bodies a vote of thanks is in order for their fine support that made my office a happy honour to hold.

Norman A. Bales,
Chairman.

W. McBAIN
5TH YEAR REP.

H. STEELE
HON. CHAIRMAN

S. R. KENT
CHAIRMAN



H. R. AGNEW
VICE-CHAIRMAN

J. W. STOREY
SECY.-TREASURER

ALICE AYER
4TH YEAR REP.

ARCHITECTURAL CLUB EXECUTIVE

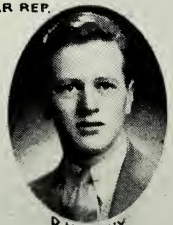
Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1943-1944

G. A. ROBB
3RD YEAR REP.

P. SEARS
2ND YEAR REP.



R. MURPHY
1ST YEAR REP.

Freeland
Toronto

Architectural Club

According to custom, the architects began the term around the good old haunts of Gull Lake Camp. Riding bicycles through brush and bramble, pasture and farmyard, we occasionally took time out to record in a permanent manner our impressions of the countryside. There, every meal is a club banquet whether under the trees or in camp.

On our return to School we met our new students—37.5% freshettes. At first they were very good kids, going to Hart House regularly. But soon they became noisy and objected to Hart House and so a tapping was in order.

In following our policy of inviting guest speakers, we had Mr. Vaux Wilson, a designer-and-salesman-of precision built houses speak to us. Not appreciating his method of selling homes over the country in a department store, we became more firmly convinced of our duty to humanity. Later in the year the club was very fortunate in hearing Mr. Creston Doner of Libbey-Owen Ford Glass Company, Toledo, Ohio, speak on the use of glass in modern design. After demonstrating the various types of glass, then illustrating with slides the use of glass in the design of store front, he concluded by explaining his design of the kitchen for the servantless house of tomorrow, leaving us to wonder what the wives of the future will do with their spare time.

The fall social event was a very interesting party at the home of Mr. Fred Coates, where under the changing colour of the lights of the studio, we sipped and supped between the dances. Arrangements have now been made to conclude the year with a banquet and so we look forward to this happy feast.

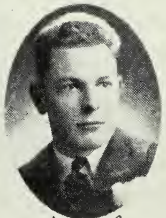
Our one field trip of the season, a conducted tour through the plant of the Cooksville Brick Company, enlightened the restricted number of students on the manufacture of our good companion, the common brick.

The student exhibition at Hart House this year was arranged by Pegeen Synge and "Chuck" Worsley. A clever innovation was the display screen telling in diagrammatic form the relation between the architect and the house buying public.

Activity in the Sample Room has not been lacking for under the guidance of Herb Agnew, your Chairman for 1944-45, displays have been arranged and catalogues filed. Thus, in reviewing the activities of the club, I would like to thank the executive and the students who have made them successful. To Herb and the gang, good fun and good fortune, for we must be on our way.

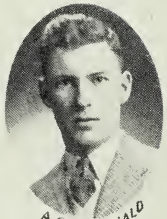
STANLEY R. KENT, *Chairman.*

E. J. HALUSCHAK
SECY-TREASURER

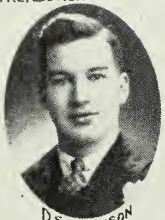


W. J. WEIR
CHAIRMAN

T. R. LOUDON
HON. CHAIRMAN



A. C. McDONALD
VICE-CHAIRMAN



D. S. JOHNSON
4TH YEAR REP.

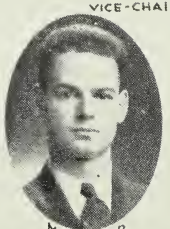
ENGINEERING PHYSICS CLUB EXECUTIVE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

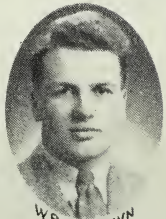
1943-1944

Freeland Toronto



M. E. BAKER
3RD YEAR REP.

J. ALLINGHAM
2ND YEAR REP.



W. R. J. BROWN
1ST YEAR REP.

Engineering Physics Club

During the past year the club meetings have been non-technical. The purpose of this policy was to obtain the simultaneous interest of all four years in a fresh subject where the members were all on the same educational level.

The first dinner meeting at Hart House was addressed by Mr. C. M. Hart, Professor of Sociology whose topic was, "Some Social Problems for the Engineer" a description of industrial psychology.

The Canadian representative of the American Federation of Labour, Mr. G. Russell Harvey spoke and answered questions until 10.30 p.m. at our second meeting. Mr. Harvey set forth the position of the American Federation of Labour, its policy and its future in a most fruitful evening of discussion.

On February 29th, the club was instructed in the "Standardizing of the Woozel Unit", by Jack Templin (4th Year, 5h) and the "Mittibular Theory in Stomic Physics", by A. G. Ratz (4th Year, 5c). This meeting was also addressed by the contenders for the chairmanship on the subject "Me".

The final dinner meeting on March 9th was held in the Diet Kitchen. Professor Underhill of the Department of History spoke on "Canada's Position in the Post-War World". The members had the pleasure of the company of our three women Engineering Physicists, Miss Dormer Ellis, Miss Sally MacDonald and Miss Beverly Meredith.

In January, the Radio Valve Company took twenty men to luncheon at the Chez-Paree and then through their plant on Dufferin Street—a most satisfactory field trip.

Thirty-five men of second, third and fourth years made a field trip through the Victory Aircraft Plant at Malton, on February 15th. The men observed the construction of the Lancaster Bomber and watched one take-off.

The club held two dances this year, both at the swank Ramona Gardens. Music was supplied by records and groceries were provided.

The Engineering Physics Club has had a good year. Its members are an enthusiastic and lively crew; they have a thousand varied interests and can be found in the thick of every campus activity, making things hum merrily. To be the representative of such a group is an honour and a pleasure. The chairman wishes to thank the members and executive for their fine co-operation during the year.

BILL WEIR, *Chairman.*

J. D. WILCOX
VICE-CHAIRMAN

J. A. HAYMAN
CHAIRMAN

F. R. GORRIE
HON. CHAIRMAN

PROF. J. W. BAIN
HON. VICE-CHAIRMAN

D. A. CAVANACH
SECY-TREASURER

K. R. BRIGHAM
3RD YEAR REP.

S. A. COOKE
2ND YEAR REP.

INDUSTRIAL CHEMICAL CLUB EXECUTIVE

Faculty of Applied Science and Engineering

G. R. SHAW
2ND YEAR REP.

D. M. CAMERON
1ST YEAR REP.

UNIVERSITY OF TORONTO

1943-1944

Freeland Toronto

W. D. CARROTHERS
1ST YEAR REP.

Industrial Chemical Club

The Industrial Chemical Club started the '43-'44 season on October 19th, with a dinner meeting in Hart House, when an unprecedented crowd of some two hundred and twenty fellows heard Dr. N. S. Grace, chief chemist of Dunlop Tire and Rubber Goods Limited, give an interesting address on "Synthetic Rubber-like Materials". At this meeting the lucky draws for engineering books were introduced, and met with general approval.

On November 19th, the Club held a dance at Casa Loma which vied with the flu epidemic for a place in many date books. However, those who managed to get there had adequate dancing space and a pleasant evening.

At the next meeting, on January 27th, the speaker was Professor L. J. Rogers who recounted many entertaining and instructive stories from his experience in scientific criminology. In addition he gave the Club members excellent advice regarding expert evidence, and interjected some of his well-known philosophy.

When this meeting was being planned, war-time restrictions assumed new proportions. Accommodation for meals at Hart House was limited to parties of fifty people, so that the First, Second and Third years, in company with the girls of the Department, had supper at Diana's while the Fourth Year got its first taste of the Graduate Dining Room, and a good one it was!

During the year the Club has enjoyed the support of Mr. Ron Gorrie, the Club chairman in 1935, and Professor Bain, who acted as Honourary Chairman and Honourary Vice-Chairman respectively.

This session found plant inspection trips more plentiful than in recent years, security measures having been somewhat relaxed. For the benefit of those who are following, it is hoped that this trend may continue.

Early in the Fall term the members of the Fourth Year were the guests of the Toronto Branch of the Canadian Institute of Chemistry at its opening dinner meeting. The class is indebted to the members of the Branch for their kindness in acquainting it with many practising chemists and chemical engineers.

To the executive, the Staff, and all the members, whose friendly co-operation makes the Club activities possible, are due most sincere thanks. May you all enjoy happiness and good fortune in the years that are to come.

JIM HAYMAN,
Chairman.

G. A. MACKIE
SECY-TREASURER

PROF. H. W. PRICE
HON. VICE-CHAIRMAN

R. H. ASPINALL
CHAIRMAN

W. P. DOBSON
HON. CHAIRMAN

A. P. QUENTIN
VICE-CHAIRMAN

E. WALL
4TH YEAR REP.

ELECTRICAL CLUB EXECUTIVE

Faculty of Applied Science and Engineering

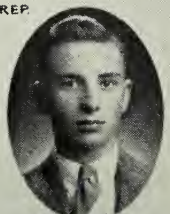
C. S. MORGAN
3RD YEAR REP.

UNIVERSITY OF TORONTO

1943-1944

Freeland Toronto

R. W. HUNT
2ND YEAR REP.



J. RUSSELL
1ST YEAR REP.

Electrical Club — 1943-1944

The Electricals have had another active and successful year. Despite the fact that time has been at a premium, the Club's activities have been exceptionally well attended.

The primary function of the Electrical Club this year has been to draw together all the years in Electrical Engineering. We have tried to get the department pulling together as a whole and to stimulate more interest in life at "School".

Our first smoker's entertainment (for the Sophs) was provided by a freshman reception. Following the ceremony, four members of the Fourth Year gave their impression and experience on Summer jobs.

In November, the Club arranged field trips for all years. Third and Fourth Years were shown the marvels of aircraft production at the Victory Aircraft Plant, Malton. First and Second Years saw arc-welding first-hand at the Lincoln Electric Company, Leaside.

Something new and different was added this year. With the Civils and Mechanicals, we held an Open House Night. Fourth Year men were able to take their guests through the labs, running smoothly thanks to Third Year. Refreshments were served following the tour.

This year's dance at Casa Loma was thoroughly successful except for some competition from nearby frosh exams. An activity like this gives Club spirit a boost.

In January, the Club had a joint meeting with the Toronto Section, American Institute of Electrical Engineers. Four of the Fourth Year men presented papers for prizes offered by the section.

Our February Smoker heard Mr. Frank Dowsett give his advice to young engineers on "Post-War Problems". A film from the Canadian General Electric, "Distribution Transformers", brought new interest to the prosaic transformer.

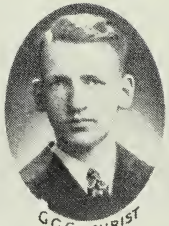
Plans are now under way for the Annual Banquet which will be held early in March at Diana Sweets.

As this brings us to the end of the Club's present activities, there is little left but to express appreciation for all those who contributed to a successful 1943-1944. To those who follow, the best of luck.

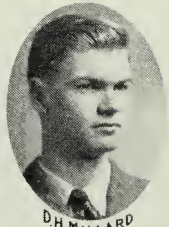
R. H. Aspinall,
Chairman.

N. D. LEA
SECY-TREASURER

PROF. W. J. T. WRIGHT
HON. CHAIRMAN



G. G. GILCHRIST
CHAIRMAN



D. H. MILLARD
VICE-CHAIRMAN

P. KAYE
4TH YEAR REP.

DEBATES CLUB EXECUTIVE

Faculty of Applied Science and Engineering

D. M. ALLOWAY
3RD YEAR REP.

UNIVERSITY OF TORONTO

1943-1944

R. A. SINGER
2ND YEAR REP.

R. V. DEYELL
1ST YEAR REP.

Debates Club

The Faculty of Applied Science and Engineering Debates Club exists for the purpose of helping its undergraduate members learn to express ideas in public.

The first meeting held in the fall was in the form of a debate on the subject, "Resolved That a Woman Is Essential in the Life of an Engineer". Jim Hurley and Sally MacDonald took the affirmative while the negative was upheld by Fred Kahn and Bill Neale. This was the first debate in the history of the Debates Club in which a woman undergraduate was allowed to take part. The negative result of this debate caused campus wide comment.

The annual Impromptu Speaking Contest was divided into two groups this year in order that more members might compete. A contest for First and Second Years was held with eleven entrants, and prizes amounting to six dollars were awarded to Murray Lount and Bob Singer of Second Year and to Boris Stoicheff of First Year. The second of the series was held for Third and Fourth Years. In this contest there were also eleven competitors of whom the first three prize winners were Ed Peacock, Miller Alloway and Fred Kahn, all from Third Year.

After the Christmas examinations a debate was held on the subject, "Resolved That Young Men Should Be Required to Spend One Year in Military Service in the Post-War Era." Harold Wardell and Ed Durand successfully upheld the negative while the affirmative was taken by Art Paget and Jim McEwen. A very lively discussion followed this debate.

In February the Club arranged the preliminary competition to determine the five men who were to present papers at the Annual Engineering Institute of Canada Students' Night.

Plans for the inter-year Segsworth Trophy Debates are now under way. Although the winning team originally received pewter beer mugs, these at present are unobtainable, and hence cash prizes will be awarded instead.

As the year ends, the chairman wishes to thank all members of the executive for their untiring efforts, and especially Professor W. J. T. Wright for acting as Honorary Chairman, and for his assistance throughout the year.

May the next year's executive have even more success than we feel we have enjoyed for the past year.

G. Gordon Gilchrist,
Chairman.

J. D. ABELL
PUBLICITY

J. WARD
PRESIDENT

R. C. RIVERS
VICE-CHAIRMAN

A. H. GORMAN
CHAIRMAN

R. F. MOORE
FINANCE

J. R. CAVANAGH
ENTERTAINMENT

W. G. HENRY
MARSHALLING

SCHOOL DINNER COMMITTEE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1943-1944

G. A. LORIMER
RECEPTION

G. ROBB
DECORATIONS

D. W. PRINGLE
TICKET SALES

A. HARVEY
ACCOMMODATION

C. WORSLEY
PROGRAMMES

54th School Dinner

Thursday, November 18th saw upwards of 600 schoolmen once again take over the Great Hall at Hart House for their Annual School Dinner. This great event was loudly heralded by the now famous school cannon and auction sale, which despite the great bargains offered, had a very poor female attendance.

The dinner, in spite of meat rationing and the acute labour shortage, was of superb quality, and the service most efficient.

Included among the guests were President Cody, the Hon. George A. Drew, Dean Young, Dr. T. H. Hogg, Dr. Balmer Neilly, Mr. M. J. Aykroyd (Sr.) and many others of distinction and achievement.

Following toasts to the King and the University, Dr. Hogg, chairman of the Hydro-Electric Power Commission, and Dr. Balmer Neilly '03, member of the Board of Governors of this University, presented the scholarships and prizes.

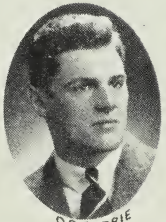
Highlight of the evening was an address by the Hon. George A. Drew, Premier of Ontario and guest of honour of the evening. He emphasized the part played by Applied Science in the prosecution of the war and the development of Canada for the peace.

The "Battle of Britain", he stated, was decided upon the draughting boards of Britain in the years before the war. We can thank God that there were trained scientists who, small though the number of machines, made it possible for Britain to have the best fighting aircraft in the world. He described the plotting rooms in Britain where aircraft were located and followed, to make possible plans for defense against them. In conclusion he wished the Engineers good luck and expressed the hope that through their skill he would be wishing good luck to Canada in future years.

Following Premier Drew's address, the school band (?) consisting of five musically inclined engineers, supplied some fine entertainment which was rounded out by Mr. Ross Workman's leading the happy gathering in a roisterous sing-song. Mr. Jack Ward did an able job in the role of master of ceremonies.

The evening's proceedings were formally though reluctantly brought to a close with a lusty Toike Oike, and as we left the hall, there wasn't an engineer who would not remember the 54th dinner as one of the best in its history, for which the committee deserves much commendation.

J. ABELL
PUBLICITY

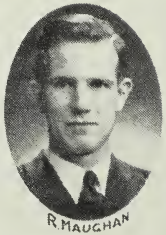


D. D. CURRIE
VICE-CHAIRMAN

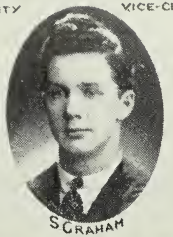
J. WARD
PRESIDENT

A. H. GORMAN
CHAIRMAN

R. F. MOORE
FINANCE



R. MAUGHAN
RECEPTION



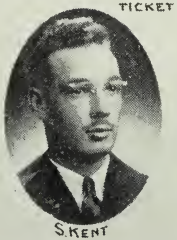
S. GRAHAM
TICKET SALES

SCHOOL AT-HOME COMMITTEE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO 1943-1944

R. ASPINALL
ACCOMMODATION

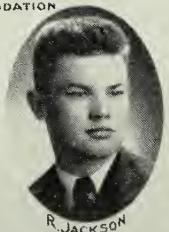


S. KENT
DECORATIONS

P. AYKROYD
DELEGATES

Freeland Toronto

H. AGNEW
PROGRAMMES



R. JACKSON
ENTERTAINMENT

School-At-Home

On the evening of Thursday, January 13th, 1944, over six hundred Schoolmen and their ladies found their way by tram and car to the spacious ballroom of the Royal York Hotel. The occasion was the School At-Home, which for the first time in many a year was informal. Although the glory of hard shirts and graceful gowns was missing, the Committee saw to it that the At-Home retained all of its former attractions.

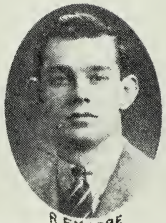
As each couple entered the hall they received a novel "slide rule" programme and a warsage, which consisted of a rose and a War Saving Stamp. On the walls of the hall hung enlarged caricatures of the Department Heads, beautifully framed in yellow and blue. Many a smile crept over the faces of Schoolmen as they saw Caricaturist Mac's conception of our professors.

The atmosphere of coloured lights and the gay music of Mart Kenney and his Western Gentlemen kept everyone on the floor. Midnight saw Art Holman and members of the band in their Coca-Cola Show. Schoolmen took to the show in a big way.

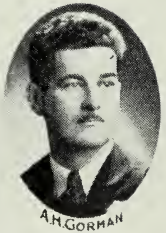
Like all good things the dance came to an end. Many felt that the At-Home should continue until dawn.

Patronesses of the evening were: Mrs. H. J. Cody, Mrs. C. R. Young, Mrs. L. M. Pidgeon, Mrs. G. B. Langford, Mrs. C. G. Williams, Mrs. J. W. Bain, Mrs. K. B. Jackson, Mrs. T. R, Loudon, Mrs R. W. Angus, Mrs. H. H. Madill, Mrs. A. R. Zimmer, Mrs. W. G. McIntosh, Mrs. W. J. T. Wright, Mrs. R. R. McLaughlin, Mrs. W. M. Treadgold, Mrs. W. S. Wilson and Mrs. A. E. Allcut.

J.D.ABELL
PUBLICITY

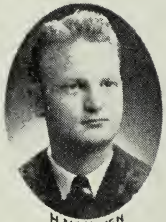


R.F.MOORE
VICE-CHAIRMAN



A.H.GORMAN
CHAIRMAN

J.WARD
PRESIDENT



H.McNIVEN
FINANCE

K.R.COULTER
RECEPTION

SCHOOL NITE COMMITTEE

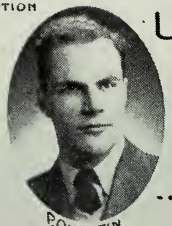
Faculty of Applied Science
and Engineering

UNIVERSITY OF TORONTO

1943-1944

J.PICKARD
REVUE DIRECTOR

B.LLOYD
DELEGATES



P.QUENTIN
TICKET SALES

W.J.WEIR
ACCOMMODATION

R.E.PENFOLD
PROGRAMMES

School Nite

The night was Friday, February 4th, 1944. The place was the Royal Ontario Museum (of all places!). The occasion was School's 1944 presentation of School Nite. Since Hart House Theatre was unavailable for thespian performances, the show had to be moved. And was it moved!—timber beams and columns, a timber ramp, a helicopter, (loaned by the T.T.C.), a totem-pole (a fugitive from a showcase), a tandem bicycle (a fugitive from the Gay Nineties), spotlights, backdrops, flats, platforms, a bed, a mattress, a switchboard, pillars, a street lamp, ladders, etc., etc., all invaded the quiet of the Museum. We certainly made Cleopatra turn over in her sarcophagus. But all the work was well rewarded by the guffaws of the audience. The girls of School took part in the show for the first time, too, and proved they can troop with the best. To put it mildly, it was a marvellous show.

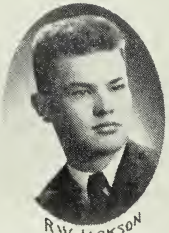
After the stage show, everyone moved down to Hart House to round off the evening with dancing, movies, tank show and cartoons. No wonder no one ever sees everything School Nite has to offer! The downbeats for the footbeats were given by five assorted bands—Bert Niosi in the big gymnasium, Jack Evans in the Great Hall, Charlie Hannigan in the East Common Room, the Hot Foot Boys in the Debates Room, and the All-Night Record Men in the Music Room. There was music to tickle every toe.

And downstairs in that sanctorum called Hart House Theatre, movies of Harry James and his Music Makers, also of the Three Stooges were flashed for those whose feet had given up the struggle. Also for those who preferred to sit out awhile, the famous Dolphinettes displayed their swimming prowess in the tank. Grant Munroe, the cartoonist, was in the gallery outside the Great Hall for most of the evening, sketching all who wished to be immortalized on paper.

All in all, as some of you may gather, and as most of you will recall, it was a very well-packed bundle of entertainment. Schoolmen owe a big "thank you" to the members of the committee, the cast, the stage crew, and the orchestra for an evening replete with the most hilarious fun that a School Nite has ever offered.

The Patrons and Patronesses were: Dr. and Mrs. H. J. Cody, Dean and Mrs. C. R. Young, Lieut.-Col. and Mrs. W. S. Wilson.

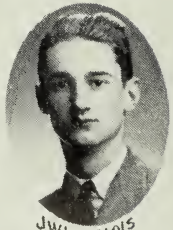
J.D. ABELL
DIRECTOR OF PUBLICATIONS & PUBLICITY



R.W. JACKSON
TECHNICAL EDITOR

R.V. SMITH
EDITOR-IN-CHIEF

E.J. NORTHWOOD
TECHNICAL EDITOR

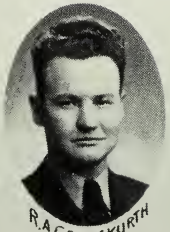


J.W. LANGLOIS
ASSISTANT EDITOR

TOIKE OIKE STAFF

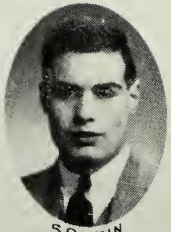
Faculty of Applied Science and Engineering

1943- UNIVERSITY OF TORONTO -1944



R.A. GROSSKURTH
LITERARY EDITOR

P.H. AYKROYD
BUSINESS EDITOR



S. PAIKIN
LITERARY EDITOR

Woodland

Toike Oike

Toike Oike, the informal publication of the Engineering Society is, according to its constitution, published every now and then. These occasions are chosen to correspond with various happenings in the school life of an engineer, and so the pages of the paper are used as a medium for dispensing information and propaganda concerning the major events of the year.

The first edition this year instructed the Freshman as to his various duties and privileges (if any). The next issue was also concerned with the Freshman although this time the attitude towards him was sure benign, as he was being welcomed into School social life at the Reception Dance.

Toike Oike then changed its form and became a program in its next two issues, those for the School Dinner and for School Nite. As befitted the occasions the contents of these two issues were on widely different planes from each other.

The election edition reverted to the standard form and became entirely a propaganda sheet as the various candidates vied with each other in vote-catching advertisements.

In addition to those regular editions, a new venture has been attempted by this year's editorial staff. Feeling that School was in need of some literary and scientific publication to provide a medium of self-expression for students, it was decided to start a quarterly, somewhat after the style of the now-defunct, "Applied Science". This proved to be quite a problem and at the time of writing printing difficulties are still holding up the publication of the first issue. If things go as planned, however, it should be distributed during examinations, to fill in those vacant hours in examination hall when one's knowledge has been exhausted but not one's time.

GULL LAKE 1943

Survey Camp 1943

The annual pilgrimage of Miners and Civils to Minden for Survey Camp, featured the Class of 4T5 this year. The boys started straggling in on August 14th and by the 15th, Minden mothers had their daughters safely under lock and key. The "would-be" surveyors travelled by every device known to man, but a goodly number made the trip in such reliable appliances as Booth's "Pedro III", Upper's "Whippet", Moffatt's "Black Beauty" (the polite name) and White & Co.'s, Chinese staff car "Connie". It was a great reunion with the boys coming from the Alcan, the mines and war plants.

The first night, the boys set out to do a detailed survey of Deer Lodge, "The Boot" Wigamog and "The Eagle" led by Cross & Co. in the "B.B." Camp was officially opened with "Treddy's" address, but actually got under way when "Coop" and Currie blew into camp four days later. Who will ever forget hearing the G - - D - - - horn blast in the morning and (without profanity) Professor Melson's early morning piano recitals. And who will ever forget the marvellous menus—Breakfast, fried baloney; Lunch, cold baloney; and Dinner, cold baloney and potatoes.

And remember—those interior decorators Newell and Hurley, Duncan's midnight dunkings, Turner's and Currie's $10.00 house-cleaning (no bets taken), Johnny Walker's "Beula the Blighted - - -", Papple the Borden Man (has no use for $25.00), all night stands at Kilcoo, Clare's galloping dominoes, the big softball game, constipated Anderson, Chappel vs. the V.C.F., Rowntree and his cat, "Coop's" stolen beer and his sweet revenge—"The Letter", and beds on the roof, in the rest room and in the lake—ah those were the days!

Social events—why sure, the boys entertained with a Weiner Roast, complete with big moon, blankets, nice fire and that timid young thing (?) from the drug store. And then the Bunkhouse Ball, a very dignified party with the beds in that far corner draped, and the sign "It's on the Hill Girls!" Remember the continuous trips to the lockers—pretty strong lotion, some of it!, the Indian Chief reciting Shakespeare and the skinny dip.

The "Brawl", held rather late in the season, catered more to the masculine company. Refreshments were enjoyed by most, while Stricker, we think, won the game of Bingo.

In closing we would like to pass on to following years a bit of advice. The proprietor of Haliburton's leading lodge is not a man to be trifled with—and we know.

WACKY AND MOFF.


415
415

V. C. F.

The Varsity Christian Fellowship—Engineering Branch

"Christianity and business mix well," said R. G. LeTourneau during an address at one of the noon-hour meetings of the Varsity Christian Fellowship. Mr. LeTourneau, manufacturer of heavy grading and road building equipment, went on to tell how his partner in all business undertakings was Jesus Christ and how he believed that "just as it requires mechanical power to operate the big earth moving machines we build, so it requires the power of the Gospel to properly operate men's lives."

This was typical of the twenty-two weekly meetings of the Engineers' V. C. F. held throughout the academic year. The emphasis was particularly on the application of a practical Christianity to an engineering career. The program included addresses from business and professional men in all walks of life with some forum meetings for Bible study and open discussion. The motto of the group is "Seek ye first the kingdom of God and His righteousness; and all these things shall be added unto you." (Matthew 6:33). The group is evangelical in character and believes that God has revealed Himself in the life, death and resurrection of His Son, Jesus Christ and that personal faith in Him results in forgiveness of sin.

Besides Mr. LeTourneau, others who spoke to the group this year were: A. G. Bennett, Vice-President, Bennett and White Construction Company, Calgary; Charles E. Gremmels, President, The Durham Navigation Company, New York City; Raymond Joyce, traveller and missionary from China; Leon Sullivan, investment banker, Philadelphia; Dr. L. Sale-Harrison, F.R.G.S., archaeologist and scientist, N.Y.; G. Reamer Loomis, realtor, Chicago; Robert Swanson, executive, New York City and Fred L. Sacher, Warden of the New York City Reformatory.

Every meeting is open and free to every undergraduate engineer. The V. C. F. is a branch of the campus-wide Varsity Christian Fellowship which in turn is associated with the world-wide Inter-Varsity Christian Fellowship.

The executive for the year were: D. M. Alloway, President; A. R. Hamilton, Secretary-Treasurer; N. D. Lea, Membership Secretary; P. H. Aykroyd, Publicity; N. R. Buchanan, 2nd Year Representative; E. Fraenkel, 1st Year Representative.

Soph-Frosh Dance

It was the evening of November 5th, and all through the Royal York Hotel, not a creature was stirring not even a . . . . . until six hundred embryo engineers and their fair ladies flocked in for the greatest social event of the Fall term.

Once again School has shown that her student activities are unsurpassed whether they be on or off the campus. Amid lusty cheers of Toike Oike, Schoolmen welcomed their first downtown social event as the beginning of a season of fun and frolic. And frolic it turned out to be, for, although the attendance was very high and dancers shuffled on the limited floor space, engineers met this minor inconvenience with a smile and made it a very successful evening.

The Banquet Hall of the Royal York Hotel was transformed into a realm of rythm and swing by the strains of Bill Thompson and his Redjackets. While most of the engineers enjoyed the music, some few ironically expressed their preference of the red coats of the musicians.

Among the added enjoyment there were several novelty and spot dances, prizes being presented by Johnny Walker.

Engineers spent much of their time riding in elevators to the various other university dances which were being held at the Royal York Hotel that same evening. However they rejoined their fellow Schoolmen and when the music faded away at 1.00 a.m. they gave out a final Toike Oike and wended their way homeward.

Among the patrons and patronesses were: Dean and Mrs. C. R. Young, Wing Commander and Mrs. T. R. Loudon, Prof. and Mrs. W. B. Dunbar, Prof. and Mrs. W. J. T. Wright, Prof. Wardell, Prof. Cockburn, Mr. W. S. Glynn.

Open House

Under the direction of Professors Angus, Loudon and Price, the Mechanical, Electrical and Engineering buildings were on display Friday, January 28th, 1944, from 8.00 o'clock until 10.30 o'clock p.m. Invitations were extended to the entire personnel of the Faculty Office and heads of other departments.

For the first time in the history of School, the inner sanctum of a schoolman's daily life was opened to his friends and relatives who flocked to see the evolution of an engineer. The hydraulic equipment was under full head, including a model of a large Canadian power development, turbines, dams and weirs. In the Thermodynamic laboratory, only some engines were operated under specific test conditions but all machines were displayed. Soil mechanics, photo-elastic stress analyses and actual specimen materials under test were featured by the Department of Civil Engineering. The Electrical Department demonstrated the applications of electronics radio, motor-generators and measuring equipment. The aerodynamic specialists in Engineering Physics conducted an experiment in the wind tunnel. An informal tea served in the Structural Design Laboratory concluded the programme.

The student committee, composed of R. Aspinall, N. A. Bales, and R. G. Maughan, respective chairman of the Electrical, Mechanical and Civil Clubs aided by junior representatives, organized the entire programme and plans are now under way to try to make the "Open House" an annual Engineering Society event.

Norman A. Bales,
Chairman.

Graduate's Album

4T4

Engineering Society

THE UNIVERSITY OF TORONTO

FOURTH YEAR CIVILS

Back Row: V. M. Wallingford, E. W. Wright, J. C. Martin, D. S. Caverly, J. F. Noble, W. F. G. Ball, R. V. Aiken, H. D. McNiven, H. J. Cherry.

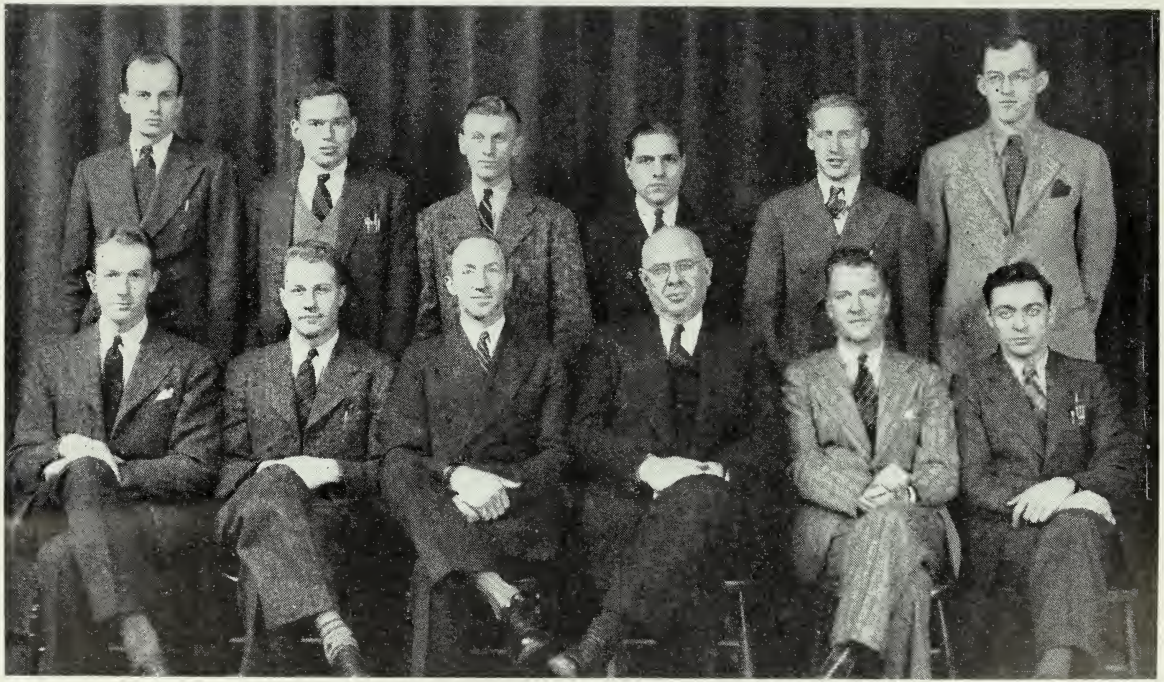
Third Row: L. W. Sommerville, J. W. Ward, D. R. Sanderson, G. C. McRostie, R. B. Belford, A. J. Rettie, C. S. Ufnal, G. B. Crawford.

Second Row: J. O. Emmerson, D. H. Perkins, W. E. Gladney, F. A. Bell, J. R. Cavanagh, F. M. Rodman, J. E. Vargas, J. J. Hurley, F. L. Peckover, J. A. Tovell, F. J. Travers.

First Row: A. G. Moffatt, Prof. R. F. Legget, Prof. C. F. Morrison, R. G. Maughan, Prof. T. R. Loudon, Prof. W. M. Treadgold, Prof. P. V. Jermyn, W. L. Bradley, M. S. Hannon.

Absent: H. B. White.

FOURTH YEAR MINERS



Back Row: T. W. Proctor, B. J. Haynes, I. R. Currie, G. C. Coupland, N. G. McLaren, D. W. Pringle.
Front Row: H. W. Peterson, A. P. Crosby, Prof. S. E. Wolfe, Prof. C. G. Williams, S. G. Farrar, F. M. Aimone.
Absent: Prof. J. T. King, L. Panzer, W. N. Rabey, C. McAulay.

FOURTH YEAR MECHANICALS

Back Row: R. R. Yuill, R. T. Mansell, D. Simpson, J. O. Sebert, G. G. Gilchrist, C. I. Wilson, R. C. Rivers, W. E. Rigg, R. C. Cline, J. B. Dewhurst, J. A. MacDonald, B. D. Wood, J. F. Greenan, J. L. Fraser.

Fourth Row: J. R. Mens, W. L. R. Hirst, J. A. Ketola, R. E. Penfold, E. S. Usher, J. H. Carson, J. H. Seymour, R. E. Austin, C. E. Lindros, E. H. Thring, H. Green.

Third Row: A. A. Hershfield, D. K. Stiles, H. W. Luckett, J. A. Mitchell, G. J. S. Ruta, H. Berrin, H. G. Grisdale, J. R. Dalrymple, T. F. Holmes, G. A. Lorimer, B. H. Lloyd, M. M. Gross, O. Clodman, J. D. Abell.

Second Row: N. A. Bales, Prof. I. W. Smith, Prof. E. A. Allcut, Prof. R. W. Angus, Prof. W. G. McIntosh, Prof. G. R. Lord, Prof. R. C. Wiren, Prof. D. D. Panabaker.

First Row: W. Shelson, J. H. Chamberlain, A. Smillie, R. M. Stuart, J. R. S. Suydam, H. D. Tiffin, J. W. Ward.

Absent: A. Harvey, F. Rueter, R. A. Scoon.

FIFTH YEAR ARCHITECTS

C. R. Worsley, Miss M. L. Imrie, Prof. E. R. Arthur, Mr. J. A. Murray, E. W. J. Nickelson, W. J. McBain, Mr. A. Adamson, S. R. Kent, Prof. W. E. Carswell.

FOURTH YEAR ENGINEERING PHYSICS

Back Row: A. G. Ratz, H. A. Harvey, R. E. J. Agar, E. S. Yuill, J. I. Orlando, A. Cominsky.
Second Row: W. J. Weir, R. J. Templin, F. S. Ballinger, J. Berman, D. S. Johnson, T. E. Munford.
First Row: Prof. H. J. C. Ireton, E. J. Northwood, R. W. Jackson, Prof. K. B. Jackson, J. P. Uffen, B. Etkin, *B.A. Sc.*; Prof. V. G. Smith.

FOURTH YEAR CHEMICALS

Seventh Row: R. Strom, P. Kaye, A. B. Rosser, G. S. Moss,R. M. Doggett, H. H. Singer, I. H. L. Wilson, J. A. Farrell.
Sixth Row: W. J. Goldstick, S. Sandler, C. H. Rimmer, F. W. Melvanin, Miss A. M. R. MacCorqudale, H. E. Herbst, T. G. Rogers, E. J. Frey, J. D. Wilcox.
Fifth Row: D. V. Schmidt, R. D. McIntyre, R. T. Lacey, I. L. MacDonald, W. G. Kingsmill, W. D. E. Anderson, J. R. Naismith, J. L. More, D. W. Gard.
Fourth Row: J. D. Wallace, A. H. Gorman, W. H. Greason, R. G. MacGilchrist, H. J. Moore, E. Yurasyk, B. F. Teasdale, H. A. White, J. A. Hayman.
Third Row: E. T. Williams, R. E. Hanson, W. J. Hogg, D. R. Jannaway, W. E. Noble, W. A. Morse, F. J. Quail, G. L. Milligan.
Second Row: A. S. Hunt, S. Cowan, K. R. Coulter, R. W. Hipwell, J. H. Dempster, L. L. Nesbitt, A. Altman, K. Georgieff, T. Storton, Prof. W. C. Macdonald.
First Row: A. M. FitzGerald, Prof. J. G. Breckenridge, MissD. Birkett, Prof. S. W. Bain, Prof. M. C. Boswell, Prof. R. R. McLaughlin, M. Adelman, W. G. MacElhinney.
Inset: R. C. Beal, F. W. Hewes, A. L. Scott, Prof. E. A. Smith, R. J. Freele, J. A. Noble, A. J. C. Bates.
Absent: J. Mah.

FOURTH YEAR ELECTRICALS

Back Row: E. Pearl, K. E. Tettmar, A. N. Manson, P. B. Kelly, N. J. Weedmark.

Third Row: I. G. More, W. D. Niven, E. K. Capstick, A. N. Panks, H. A. French, K. R. N. Langdon, W. T. Balderson, W. A. Amos, A. R. Potts, C. H. Hopkins.

Second Row: R. M. Clark, A. Madryga, M. R. Lester, A. R. Conning, R. G. Hamilton, J. T. Harvey, W. O. Cartier, H. F. Philp.

First Row: E. Wall, Prof. D. N. Cass-Beggs, Prof. R. J. Brown, Prof. V. G. Smith, Prof. H. W. Price, Prof. A. R. Zimmer, Prof. J. E. Reid, Mr. R. G. Anthes, R. H Aspinall.

FOURTH YEAR METALLURGISTS

Back Row: W. G. Henry, E. W. S. Ward, H. R. Montgomery, B. R Allan.
Second Row: D. E. Tough, S. L. Graham, D. W. Davies, J. H.Reid, W. E. Kuhn, G. S. Duncan.
First Row: A. Frumkin, Prof. R. J. Montgomery, Dr. L. M. Pidgeon, J. A. King, Prof. J. A. Newcombe, Prof. J. E. Toomer, H. Ross.

4T7

Although our first "School" year was spent in a war-conscious world each one of us will retain pleasant memories of his beginning in S.P.S. Unlike the preceding year, we were not exceedingly strong in number, with only three hundred students enrolling.

Our class was formally introduced to university life by Dean Young and his colleagues and were reminded of the obligations and privileges of being engineering students in war time. As was expected the Sophomores also gave us Frosh a warm welcome indeed. In fact they took a whole Friday afternoon to make their welcome impressive. It wasn't long, however, before we could all give out with a lusty Toike Oike or tell jokes that made all the girls on the campus say, "Isn't that just like a 'School' man?"

During the Fall term the spotlight shone on three social functions. The first was the Freshman Reception dance held in Hart House with the music being supplied by Bert Niosi, The Red Jackets and Hannigan's Mountaineers. Then came the Soph-Frosh dance early in November, bringing the Sophomores and Freshmen together again but on more friendly terms. Following the Soph-Frosh and ending the social activities for the Fall term, was the School Dinner.

By now the examinations were upon us and for a few weeks before Christmas we worked like a bunch of busy little Arts men.

The coming of the New Year brought along the School-At-Home which was a great success and enjoyed by everyone who attended. This was followed by our first class party out at the Club Kingsway. The repertoire of Ozzie Williams went over big with all the boys—perhaps even the blushing damsels liked it.

In February, the spotlight shone on School Nite. The different skits, along with music by six bands, movies and an aquatic display by the Dolphinettes all added together to make a really swell evening.

The last social gathering of the year, the Junior Soph-Frosh was held at Casa Loma, with the Modernaires supplying the music.

Many members of our class took part in various "School" activities and it is hoped that next year even a greater number will participate in such affairs. Each year more responsibility will fall upon the Class of 4T7 so let's get in there and start pulling right from the start.

J. F. Walker,
President.

4T6

Once again the time has come to divert our attention from athletics and frolic to the more serious vocation of books and lab reports. However when we look back over the past six months every one of us will say that they have passed much quicker than we realized. As we glance at the quickly ebbing sands of the hour glass we take a little time out to think of the benefits we have obtained from our acquaintance with our fellow students and professors. But before we dig too deeply into those textbooks we want to recall what matters of importance occured in the past year.

In beginning an analysis of the year's activities we recall those sunny autumn days when we lolled around the campus, with not a care in the world, and watched our freshmen become acquainted with those of other faculties. However these skirmishes were merely warm-ups for the initiation which took place on Friday, October 8th. By special permission of the faculty, and in the interest of better understanding between freshmen and senior Schoolmen, the frosh were assembled in the Mining Building and paraded to Varsity Athletic Field, where, under the direction of the sophs, they were given a taste of the old school spirit. Although the events did not occur exactly as had been planned, everyone, including Dean Young, agreed that the initiation had been a success and that future initiations would be modelled along the same lines. On the evening of the initiation ceremony a Freshmen Reception Dance was held at Hart House at which Bert Niosi, Norm Harris, and the Mountaineers kept a large crowd hopping until well after midnight. The dance was a great success but the freshmen attendance was much lower than had been anticipated.

Then in the early part of November the Royal York crowded with Schoolmen attending the Soph-Frosh Engineers jostled with Meds and Dents but the result was an enjoyable evening with the Redjackets supplying the music for the engineers.

Just before Christmas we had our biggest social event of the year. With practically hundred per cent turn-out, both dance halls at the Club Top Hat were crowded. Never before had the men of 4T6 had such a party—two bands, two dance halls, pro-

fessional entertainers, Schoolmen's skits, cigarette girls—all these combined to become the most sensational hit of the year.

It was not until the end of February that we took time out for our second event, also at the Club Top Hat. Again, we were able to obtain two bands, Coleman Hawkins and Frank Bogart, and these masters of swing entertained us all evening. Being a Leap Year Party, it was decided that the dress would be plaid shirts for men and sweaters for the girls, thus lending a colourful air to the already exquisite surroundings of the Club Top Hat. Among some of the entertainment were School songs, novelty dances, and prizes for the most colourful dress. A fortune teller was employed to give the fair sex encouragement during this Leap Year. Long will the memory of this event linger in the minds of our classmates.

Finally we take another quick glance at the hour glass and we see that we have very little time left for amusement before the final examinations. However, we joined hands with 4T5 and 4T7 and on March 7th held the Junior Soph Frosh at Casa Loma with the Modernaires providing the music. The attendance was not as high as expected.

But now the time is nearly up, and may I extend my sincere wishes to one and all that Lady Luck will favour you and make it possible for you to be with us next year. To those who contributed their services to make the year a success we wish to extend our heartiest congratulations for a job well done. I also wish the new executive a successful term throughout the following school session.

Until then—lots of luck.

AL KLASSEN,
President.

4T5

By the time you read this, men of 4T5, you will be B.A. Sc. by three-quarters. It hardly seems possible that three years have romped by so quickly. In those three years we have not only learned how to study and write lab reports but many of the finer things of life have come our way, through the activities of the Class of 4T5, the Faculty of Applied Science and Engineering and the University. One cannot help but improve himself by broadening his interests socially.

An account of the athletic and academic achievements of our year would take much more space and time than is alloted to me. It is sufficient to say that we have passed through a very successful year athletically, and if the Reed Trophy comes to School again this year it will be due in no small measure to the efforts of the many fine athletes we have in our year.

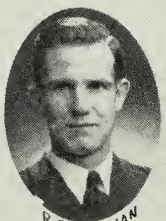
The Class of 4T5 opened its social season with the joint 4T4-4T5 Christmas Party. The dance was held at Casa Loma, on December 17th, with the Modernaires providing excellent music. During the intermission the Class of 4T5 demonstrated their versatility by entertaining the guests with a brilliant show including everything from a barber shop quartette to Old St. Nick himself. The evening was enhanced by refreshments in abundance.

From an informal general opinion survey it was found that something different would be appreciated in the way of a class party. Bowing to the will of the majority the executive arranged a sleigh-ride party which was held at the Willowdale Riding Club on February 23rd. The attendance was rather disappointing, due no doubt to the deceptive appearance of the weather. The party was a huge success. After the sleigh-ride, hot dogs, cake and coffee were served to pave the way for an evening of dancing.

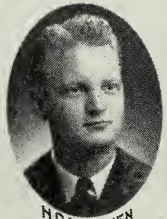
The Junior-Soph-Frosh is, at the time of writing, still in the planning stages. The date is set for March 7th, the place, Casa Loma, and the music, The Modernaires. All indications are toward another thoroughly enjoyable party.

It has been a great year and we have a gang of which to be proud. The executive wishes to thank the Class of 4T5 for their willing support not only of the year but of the various School activities. Next year is the last lap, fellows, and we wish the Class and their incoming executive the best of luck for our graduating year.

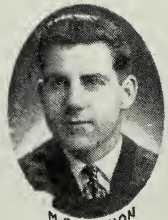
Doug Currie,
President.



R.G.MAUCHAN
CIVIL CLUB



N.D.McNIVEN
SECY-TREASURER



M.S.HANNON
VICE-PRESIDENT

A.P.CROSBY
PRESIDENT

A.J.RETTIE
ATHLETIC REP.

I.R.CURRIE
MINING & METALLURGICAL CLUB

S.R.KENT
ARCHITECTURAL CLUB

FOURTH YEAR EXECUTIVE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO 1943-1944

N.A.BALES
MECHANICAL CLUB

J.A.HAYMAN
INDUSTRIAL CHEMICAL CLUB

R.H.ASPINALL
ELECTRICAL CLUB

W.J.WEIR
ENGINEERING PHYSICS CLUB

G.G.GILCHRIST
DEBATES CLUB

Freeland

4T4

It has been repeatedly stated that our class is the last to retain remnants of former care-free days. One backward glance to our junior years will prove this statement.

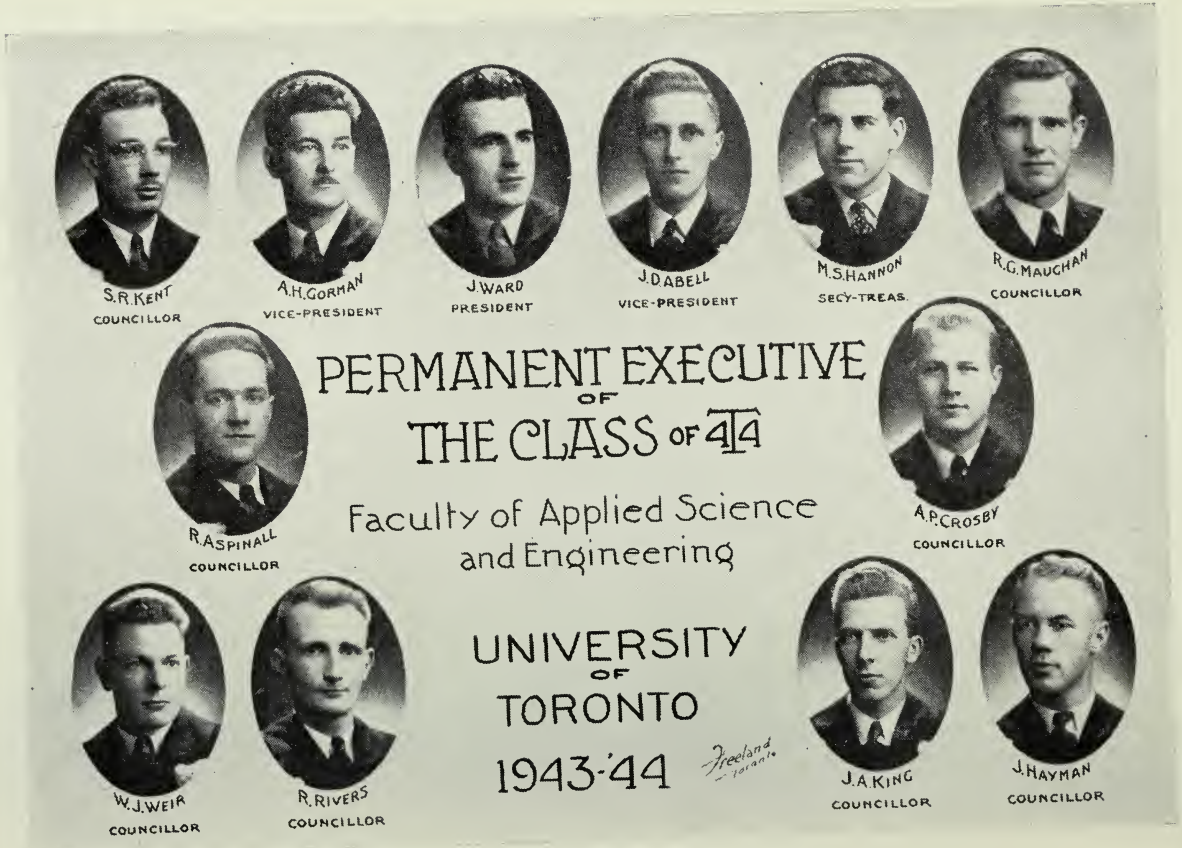
Jack Ward, who lead our class through its first three years, played a great hand in re-kindling School Spirit, not only by giving us the best parties obtainable but also by introducing many constructive reforms to the Old School.

Normal university life, with its hazing, leisure hours and intercollegiate tussles, is practically unknown to us. In spite of this, every member present at the Grad Ball will agree that the Class of 4T4 still has and always will have the "Spirit of School".

During our final year we found it difficult to think in the present; we either looked back to pre-war days with a smile or more solemnly prospected the future.

Now that we have graduated, let each and every one of us, whether we be in the ranks or in industry, keep our eyes trained to the future, exerting every effort to bring about the realization of the things our country is working and fighting for.

A. P. "Buzz" Crosby,
President.


S.R.KENT
COUNCILLOR
A.H.GORMAN
VICE-PRESIDENT
J.WARD
PRESIDENT
J.D.ABELL
VICE-PRESIDENT
M.S.HANNON
SECY-TREAS.
R.G.MAUCHAN
COUNCILLOR
R.A.SPINALL
COUNCILLOR
PERMANENT EXECUTIVE
OF
THE CLASS OF 44
Faculty of Applied Science
and Engineering
A.P.CROSBY
COUNCILLOR
W.J.WEIR
COUNCILLOR
R.RIVERS
COUNCILLOR
UNIVERSITY
OF
TORONTO
1943-'44
Freeland
Toronto
J.A.KING
COUNCILLOR
J.HAYMAN
COUNCILLOR

4T4 Permanent Executive

This eventful Spring of 1944 brings, for the majority of us, a culmination to our days of school life. The last examinations have been written and we have suddenly, perhaps sorrowfully begun to realize that "our undergraduate" days with all their pleasant memories now lie behind us.

During the past four years as fearful Freshmen, feared Sophs, respected Juniors and revered Seniors our paths have run parallel, now they must needs branch out in many directions.

The years that we have spent at School have been filled with incidents never to be forgotten. By working together, living together, playing on the same teams and enjoying the same social activities we have developed the friendships, the acquaintances which will mean so much to us with each passing year. Let each of us strive to maintain and keep alive those friendships.

Only with the aid and determination of every individual in the Class of 4T4 can the Permanent Executive carry out the ambitious program it has drawn up, without the co-operation of each member of the class, the task is hopeless.

The Executive will maintain a record of the names, addresses and occupations of all the graduating class. Hence, keep them informed and up-to-date in all matters concerning yourself; your location; your work; your health, etc. Address all location cards together with the above information to the Secretary, Matt. Hannon, and in this way the record will be kept complete. This information will be available from the secretary and from the various councillors who are ready, willing and able to help you in any way they can.

The Executive will contact you frequently through the UNIVERSITY OF TORONTO MONTHLY, our own publications, and by personal correspondence. It is planned to provide news of interest in the form of circular letters and reunion gatherings will be organized at appropriate times and places.

Let us *keep* the Class of 4T4 as active as it has been during these past four years. Let us *help* our Executive to make that possible. Once again, remember to keep in contact with the Executive in the future and for information about any matter concerning classmates or School activities get in touch with the Secretary or the Councillors.

President: J. WARD,
538 Roselawn Ave.,
Toronto.
HU. 2212.

Secretary: M. S. HANNON,
465 Avenue Road,
Toronto.
MI. 6089.

Grad Ball

The Night was Thursday, March 2nd, 1944.

The men of 4T4 and guests first dined in the Oak Room of the Union Station at 9 p.m. and then proceeded to dance to Mart Kenney in the Roof Gardens of the Royal York Hotel.

During the after dinner programme the Gold Keys were presented to the Engineering Society Executive. Each member of the staff received a framed caricature of himself causing such comments as, "I don't look that bad do I?"

It was generally thought that the evening went all too quickly, but that the memory would linger for a long time to come.

The Committee deserves hearty congratulations for providing the party that we had looked forward to for so long.

School Athletics

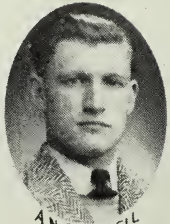
1944

Engineering Society

THE UNIVERSITY OF TORONTO

D.M. GIBSON
SECY-TREASURER

N.B. WHITE
PRESIDENT



A.N. CAMPBELL
VICE-PRESIDENT

A.J. RETTIE
4TH YEAR REP.

ATHLETIC ASSOCIATION EXECUTIVE

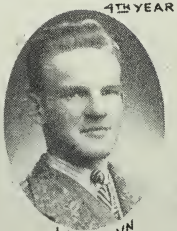
Faculty of Applied Science and Engineering

W.W. MOFFATT
3RD YEAR REP.

UNIVERSITY OF TORONTO

1943-1944

Freeland
Toronto



J.A. BROWN
2ND YEAR REP.

C.W. DANIEL
1ST YEAR REP.

Athletic Association

The equipment's been stored and the liniment put away after another season of Interfaculty Athletics. It has been a great year for School, as they won nine championships out of a possible twelve during the first term, and after the holidays came back to swamp Mac with sixty-five baseball and basketball teams. It foretold great things for the T. A. Reed Trophy, and Schoolmen, absorbing a cut of thirty per cent enrolment, went on to ring up a record number of points.

However, when the smoke cleared after a hectic indoor track session that saw as many as 900 men at Hart House in two days, the Meds from across the road were found sitting on top of the golden cup. They worked hard for it and deserve a pat on the back, but there is going to be a real fight for it next year.

They say a change in the point system is planned for next year, so you can all get behind Don and Gus and the others and take advantage of it and get the trophy back.

Speaking as past president, I would like to thank all those that have worked with me this year, and as a member of the Executive, thank all you Schoolmen for one of the best years in School's sports history.

Best of luck Don.

H. Brian White,
President.

Bronze "S"

Due to initial academic reverses, Hal Seymour is the only graduating engineer who has played intercollegiate rugby, for he was on the Varsity Intermediates in 1939. Next year he played Junior School rugby and in his last two years he was on the Senior School Team.

Hal has played soccer every year; and beginning in his third year, when S.P.S. first had two teams, has been on the First Team. He played Junior School Hockey in first and second years and Senior Hockey in his third year. A knee injury incurred at soccer in his final year prevented him from playing hockey that year and also seriously hampered the Senior Rugby Team for its last few games.

As a result of the injury, Hal fell back on inter-departmental

sports. He had played basketball and indoor baseball in the preceding year and now he added indoor track.

Oh, yes, Hal also played on the Senior School Baseball Team in third year, making four interfaculty sports for that year. Add up all his successes and you'll find that he has played on 18 School teams, including six championships.

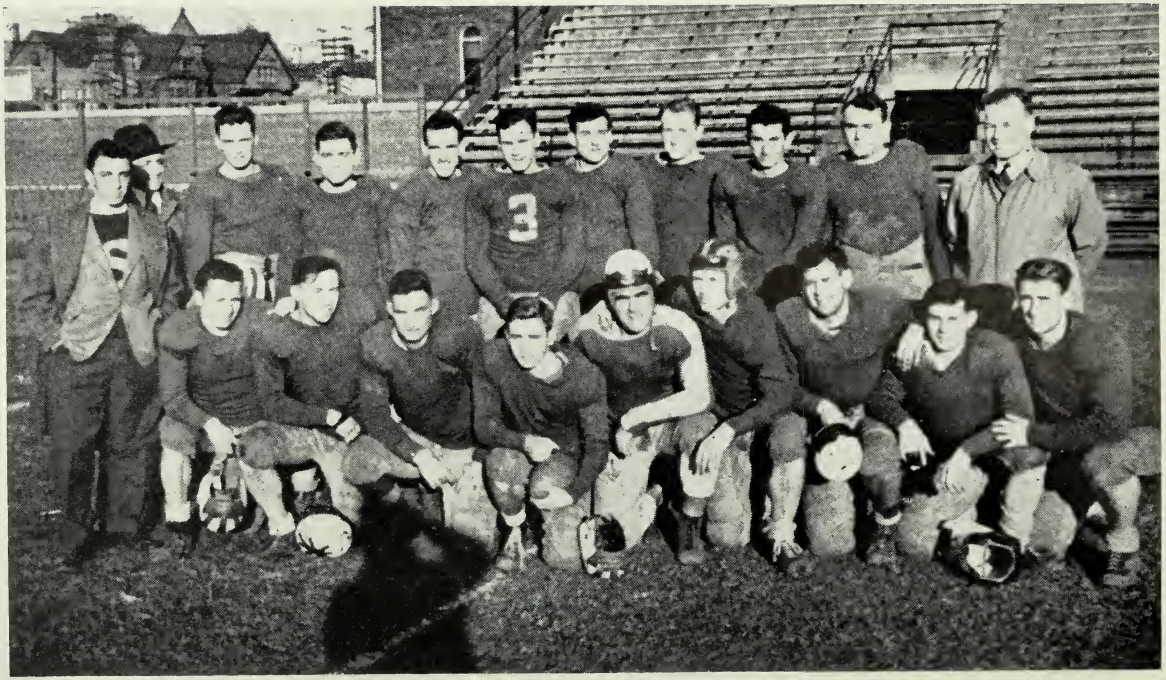
The graduating engineers have this year awarded the Bronze "S", their highest athletic honour, to Hal Seymour as a tribute to his record during his stay at S.P.S.

Phene Memorial Trophy

Harold Seymour, holder of the Bronze "S" for this year is also winner of the seventh Phene Memorial Trophy. Only once before has it happened that a man has risen to the high ideals of both awards.

This cup is presented annually to the man on the Senior School Rugby Team who has, in the opinion of the other players, shown the best conduct and team play for that year. It represents the esteem and faith of the team in a true sportsman, a gentleman of the field who played purely for the love of the game.

SENIOR FOOTBALL TEAM



Back Row: L. Pancer, *(Coach);* V. Booth, R. Hicks, H. Seymour, J. Clare, D. Keary, H. Peterson, J. Orlando, D. Collings, R. McIntyre.

Front Row: S. Cooper, *(Manager);* G. Evans, K. Craibbe, W. Moffatt, B. White, W. Henry, W. Sharpe, T. Newell, R. Moore, P. Cross.

Absent: D. Wallace, D. Tough.

Sr. Football - Mulock Cup Champions 1943

The football season of 1943 saw the return of the Mulock Cup, emblematic of football supremacy, to the little red schoolhouse. Backed up by a fighting line, a sound backfield and the best kicking the interfaculty loop has seen in years, the boys came through on the victory wagon.

The season began momentously with consecutive shut-out defeats of Vic. 10-0 and 4-0 and the loss of hard plunging Truck McIntyre for the season. In both games the line stood out with their superb defensive play. Dan Collings, Sweeney Cross, Bill Henry and Bill Moffatt looked as good along the line as any intercollegiate material we used to see in those halycon days of yore.

Two games followed with Sr. Meds. These brought forth a win 13-6, a minor meeting among the ranks, (remember boys?) and a last-minute loss 5-3. Ross Clare kicked, plunged and ran phenomenally, Hal Seymour plunged hard and Whizzer White called them well. Along the wing line Ken Craibbie, Doug Wallace, George Evans, Doug Currie, Johnny Orlando and Dave Tough were hard to beat.

Aroused, the boys went ahead to defeat Sr. Meds for the group 7-0. Then they took the high-touted Army team 25-7. Vern Booth came to life and was aided by Chunky Moore's tackling and good work along the line by Newell, Hicks, Peterson and Sharpe.

Then came the Mulock Cup Final. Whatta day! Bands were out. Loudspeakers blared, school was called off and there were cheer leaders galore. We took the cup defeating U.C. 8-2. Outstanding were Doug "Flash" Keary, Stu Graham, Ross Clare and the entire line.

Coaching represented a problem early in the season but was solved with the co-operation of co-captains Brian White and Bill Henry. Line coaching fell to Sweeney Cross and bench strategy to the writer. Technical consultant was Mr. L. Panzer of the Dept. of Mining Engineering.

Thanks boys. Let's take it again in '44.

SYDNEY COOPER.

JUNIOR FOOTBALL TEAM

Third Row: W. K. Sharpe, *(Coach)*; J. D. McMichael, D. Cameron, G. Campbell, R. I. J. McCombe, W. A. Freeman, W. A. M. Kyro, T. Ewing, J. R. S. Newhouse, *(Manager)*.

Second Row: J. N. Booth, C. Evans, J. D. B. Bromley, K. H. Sharpe, *(Captain)*; C. W. Daniel, A. K. Stuart, M. D. Phillips, J. D. Orr.

First Row: G. S. Boa, H. J. Hamm, J. A. Robbins, A. W. Spear, P. Roberts.

Junior School Rugby

Although this year's team lost out in the season's play by a shady victory of Army over U.C., the team made a very creditable showing to finish in third place in their group.

The team opened the season with an easy victory over Junior Meds who showed the lack of training and condition. Highlights of the game were McCombe's passes to Evans and Bromley, McCombe's and Robbins' plunging and the consistently good play of the line.

The team then seemed to hit a slump and dropped two games in a row. The first, a hand-fought battle with U.C. went to U.C. by a close 1-0 decision and was really a tough game to lose. The Army, with their strong team, managed to take the next game although it was a hard fought battle.

In the return engagement School managed to turn the tables and added Army to their list of victims for their second victory. Orr's strong kicking proved the margin of victory on a cold wind-swept back campus. The backfield made good yards with wide open running plays while the line was excellent both on offense and defense.

Cold hands resulting in numerous fumbles cost the team their return match with U.C. and cut their chances for a play-off berth.

Making a comeback after going down 9-0 in the first half, the team finished the season by a win over Meds. The line got together to open the widest holes of the season for "Smitty". Smith whose plunging—often for ten or fifteen yards finally resulted in the win. Orr's fine kicking again gave the team an edge, although Staley for Meds made it close on the kicks. From the players' angle it was a hard game; both McCombe and Robbins receiving fairly serious injuries.

Throughout the season all of the players played well and gave their best. Bert Hamm and Al Spear provided good quartering and ball handling, and Spear threw some good passes. The ball toting and kicking chores were capably handled—except for the occasional fumble—by the backs—Gordy Carrol, Bill Daniel, Charlie Evans, Bob McCombe, J. Orr, "Jake" Robbins, and "Smitty" Smith.

Up on the line Gil Boa, W. Booth, Dunc Cameron, F. Ewing,

Art Freeman, Doug Glenn, Sam Heslip, Hal McKnight, Don McMichale and Sandy Stuart did a good job while particularly outstanding were Jim Bromley and Pete Roberts at end. Ken Sharp and Wally Kyro at inside and Gus Campbell at snap and centre secondary; Gus also dropped back to fill in the kicking spot on occasion.

Walt Sharpe gave the team the benefit of his experience and football knowledge gained while playing for Humberside and School and it was not his fault the team missed the playoffs.

With a touch of luck we might even have done that. However, the Mulock Cup is back at School this year so things are not too bad.

That about winds up this little review of Junior School's Rugby Team, 1943, so here's a little better luck for 1944.

John R. S. Newhouse,
Manager.

SENIOR LACROSSE TEAM

Back Row: J. Turner, A. Gorman, D. Keary, A. Crosby, H. Boyle.
Front Row: P. Cross, S. Kent, I. Currie, R. Moore.

Senior School Lacrosse

For the first time in four years the Dafoe Cup does not come to School; we practically had permanent possession of it. The team was built around several of last year's players in the persons of Kent, Gorman, Crosby and Currie and with Keary, Turner, Boyle and Steele was almost the same as that which played as Junior School two years ago. Sweeney Cross and Chunky Moore were the newcomers.

Steele was the mainstay in goal. When traffic got a little heavy around the net Steele was at his best and he turned in some brilliant efforts. Gorman and Cross on the defence made the road to the net rocky for opposing forwards and it was as much as their life was worth to leave their end of the floor. Both of these rugged lads were remembered and referred to by opposing players as a "couple of clean (?) players". The line of Keary, Crosby and Currie supplied most of the scoring punch with Keary one of the best two-way men in the league; the line of Kent, Turner and Boyle supplied most of the running—and a good share of goals. Turner had his opponents baffled with his powerful forehand and backhand shots from the corner. He could never tell where or when they were going and neither could the goalkeepers. Boyle scored a goal in the first game and has been talking about it ever since, trying to prove it.

The team was placed in the strongest with Meds and Vic. The first game was dropped to Meds by the score of 7-5 but the next one saw the Meds go down 6-4. The third game ended in a 7-7 tie with Vic and in the final game Vic nosed School out of the playoffs by a lost second goal and a little too much Dedrick. The final score was 11-10.

The team was much better than their record indicates and would probably have taken the cup had they reached the play-offs. Next year's team built around a nucleus of players like Steele, Turner, Keary—and Boyle, should be good enough to have no trouble in bringing the Dafoe Cup back to School.

I. R. Currie,
Manager.

JUNIOR LACROSSE TEAM

Back Row: A. Gorman, J. Hall, J. Fydell, R. Sheppard, R. Tredgett, L. Vencharutti.
First Row: K. Wilson, S. Williamson, R. Hunt.

Junior School Lacrosse

The Fall of '43 saw a good turnout for all School lacrosse teams. Unfortunately the Junior Team was called upon to meet a strong Dent's team before the Schoolmen were completely organized. The result was that Dents downed School by 16 to 3.

Before their next game the Juniors were joined by two first year men, Willson and Fydell. These boys played a real stick-handling game and gave the team the balance it needed. Meds 2nd were trounced by the tune of 17 to 1. Pharmacy dropped out of the league leaving it a three-team race.

The new Junior Team stood up to Dents, a really powerful outfit, and lost by only one goal (8-9).

In their last game the boys had a field day at the expense of Meds 2nd team (26-3).

The team was as follows: Williams, goal; Hunt and Tredgett, defence; Sheppard, Hull and Venchiarutti formed one line with Tennant, Willson and Fydell the other. The chief goal getters were Willson, Hull, Tennant and Fydell. But this was no team of star players. They played as a team and made a good showing against strong teams.

A. Gorman,
Manager.

FIRST SOCCER TEAM

Back Row: J. McDonald, A. Allan, H. Seymour, R. Clare, M. Dickson, A. Ahuja.
Front Row: D. McNair, J. Main, L. Kaufman, R. Ehrlick, K. MacInnes, J. Robinson.

1st Soccer

This Fall saw yet another championship fall to a School team for soccer. Defending last year's Joint Championship, a much weakened Senior team battled through the scheduled six games to place second in the group. No games were lost but many tied lost us many points.

The semi-finals match with Trinity was well contested, but a weakened Trinity eleven, threw the balance in our favour.

The final game against Emanuel nearly upset our applecart. During this game our veteran centre half, Hal Seymour, received a bad crack on the knee as he effectively averted a potential goal. The remainder of the play including twenty minutes' overtime resulted in a tie. The game was therefore replayed.

Due to the reporting error of *The Varsity,* this game had to be played with only nine men to a side. A decisive score in our favour was not indicative of the close play.

Only three of last year's Championship team were back this year, the remainder being all newcomers. Next Fall, with the exception of Hal Seymour who is graduating this Spring, a full team will be back, to retain the Arts Faculty Cup in School's silver collection.

JOHN C. MCDONALD,
Manager.

SOCCER

THIS IS WHAT HAPPENS WHEN NAMES ARE NOT TURNED IN!

School 2nd Soccer

This Fall, twelve raw recruits played some very good soccer in Group Two of the Soccer League. Disorganized and crude play changed rapidly to a neat game of soccer which was a threat to the Trinity and U. C. teams. This vastly improved team will provide many replacements for a Senior squad next Fall; and it is not unlikely that they should prove to be strong competition for them.

Two games were won out of the six played and only one game were they on the wrong end of a very high score.

Jimmy Robinson at outside left played a very good game, not only here but for the first team in the play-offs. He sports a very handy left boot, which has a habit of scoring.

For a good team, again in the Fall keep an eye on School 2.

J. C. McDonald,
Manager.

SENIOR TRACK AND HARRIER TEAM

Back Row: V. Booth, D. Wilcox, T. Barry, D. Pringle, J. Orr.
Front Row: D. Price, W. Kerr, G. Lorimer, F. Mulligan, J. Watts, G. McDonough.
Absent: A. Todd, F. Fordyce, L. Peckover, D. Watts.

Track and Harrier

As the outdoor season rolled around once more this Fall, it soon became evident that School was whipping up a promising team, under the expert guidance of Heck Phillips, our much respected coach. Almost every afternoon, despite the calls of army drill, one would see the boys jogging the track or clearing the bar. The practising was well rewarded, for School won top honours once more, in the Senior Track Meet (59-19), the Relay Meet (19-17) the Junior Harrier and the Senior Harrier.

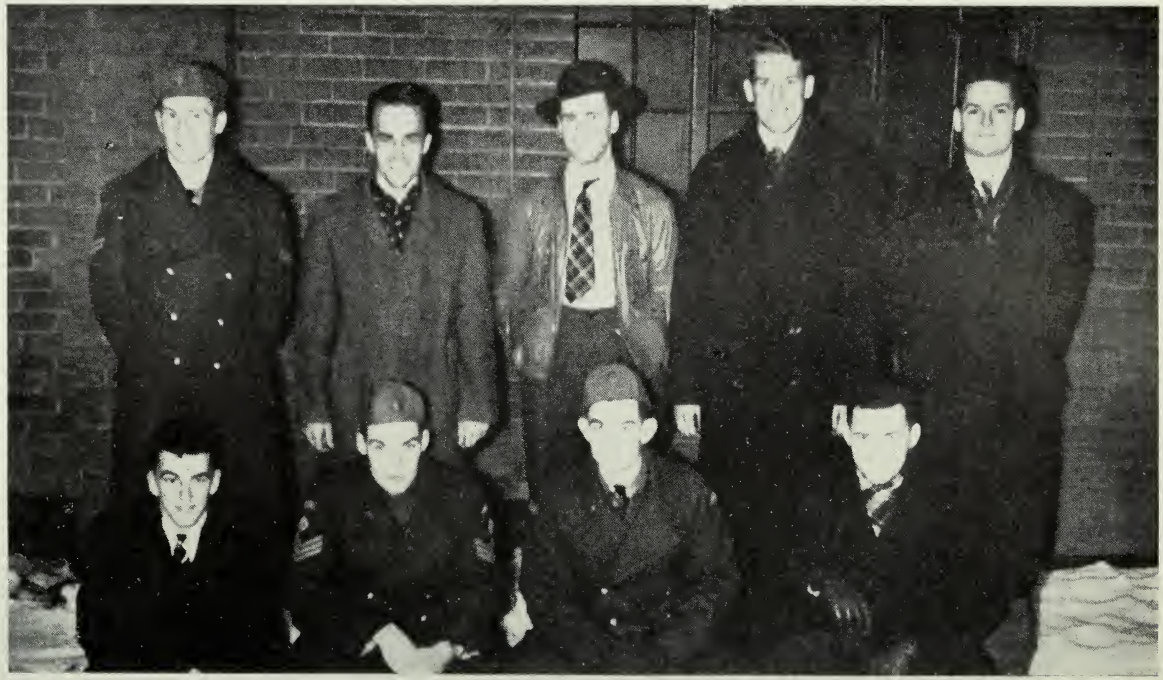
Although the team greatly missed Charlie MacDonald and Johnny Feldhans whom we had expected to be back, this year's squad was very strong, especially by the addition of several promising Freshmen. Frank Fordyce and Johnny Watts were the stars of the team. Frank continuing with last year's successes, captured the half-mile under very stiff competition by Meds, in excellent time, and also took the two-mile event, followed closely by Watts and Lorimer. Johnny Watts, a Freshman, gained a terrific start on his University career by winning the junior mile, two-mile and javelin, the junior harrier, the senior mile and senior harrier. We are expecting great things of Johnny for the future. Although we were a trifle shy of sprinters, Frank Milligan, Dudley Wilcox and John Price handled their events very nicely, gathering thirds in the 440 junior and senior, and 220 junior, respectively, with Verne Boothe and Gord Lorimer capturing first and second in the hurdles. The high jump starred Bill Kerr, again champ, with Al Todd and Don Pringle close behind. The pole vault was an all-School victory with Tom Barry, Al Todd, Bill Kerr in the top places. Don Pringle, Jim Orr, Dudley Wilcox and Dick Watts gathered in more points in the shot put, javelin, and discus.

The relay meet provided some real upsets, thrills and laughs. The quintet of Fordyce, Watts, Wilcox, Peckover and Lorimer, all well-known distance men, combined by various shifts into teams of four and managed to win the two-mile, mile and half-mile events, just nosing out Meds, in some remarkably good times. They also obtained second in the medley, and third in the quarter-mile raçes against a strong quartet of Dent sprinters.

Next year's prospects look even better, despite the high standards set up, since most of the men will be back (we hope); so here are best wishes for the future squad, and I hope to see you all again on the cinders next fall.

Gord Lorimer,
Manager.

SENIOR HOCKEY TEAM



Back Row: J. Shand, R. Upper, R. Clare, D. Wilcox, M. Baker.
Front Row: S. Kent, J. Boa, R. Moore, M. Walker.

Senior School Hockey

This year Senior School was grouped with U. C. 1, Senior Meds, Army and Vic 1. In the opening game of the season School was defeated 5-4 by Army in the last two minutes of play, with goals by Kelly, Willcox and Shand (2).

School next tied Sr. Meds 2-2 in a rugged game, Baker and Upper scoring. School defeated Vic 5-3 in their only game of the season and then lost twice to U. C. 1, and once to both Army and Sr. Meds, all by one goal margins.

The first line of Boa, Upper and Walker played good hockey all season, with Upper scoring consistently. On the second line, Mac Baker worked well with Kelly, and Clare or Willcox, who both alternated between defense and forward. Jack Shand on defense played stand-out hockey all season playing the full forty minutes for all games. Ross Clare was another forty-minute man alternating effectively between defense and left wing. In the nets "Chunky" Moore turned in spectacular efforts all season and the goals that were scored on him were well earned.

Due to the absence of Herb Stricker and Hal Seymour through injuries, most of the S.P.S. 3rd's played one game for the Seniors during the season. Next season should be brighter, with most of the Seniors back, reinforced by four or five strong Juniors.

S. L. Kent,
Manager.

JUNIOR HOCKEY TEAM

J. Bromley, *(Coach)*; G. Shaw, A. Brownridge, D. Davis, K. Rowntree, *(Manager)*; K. Andison, H. Bain, T. Sutton.
Front Row: K. Wilson, M. Sadiston, G. McDonnough, J. Bradford, R. Morrish.
Absent: K. Young.

Junior School Hockey

Junior School, runner up for the Jennings Cup and Intramural Championship showed real power and spirit from the very beginning.

During the league games against Meds II, Dents A, and St. Michael's we lost but one game—to Meds.

School put out Knox and Senior Meds in the semi-finals to meet up with U. C. Seniors in the finals. Losing the first game 5-2 the Juniors came back in the second game to beat U. C. 9-5. In the last game of the series Junior School held a lead of 2-1 until the third period when U. C. tied the score and chalked up another goal to win the championship.

Few could help but admire the game of Harvey Bain, the captain who played defence; he was actually a second goalkeeper on the ice.

Gammy McDonnough was the most brilliant net-minder of the year.

The combination of Brownridge, Sabiston and Sutton was outstanding with playmaker Brownridge setting the pace. Sabiston is a very fast and shifty forward who played hard both ways. The team suffered a major loss when Ted Sutton left the game due to injuries received when playing Dents A, while School had three men in the penalty box.

Ken Andison proved to be the team's dark horse in the finals by out-playing any opponent.

Jim Bradford is a conscientious and opportune player whose scoring was well above average.

The season was not without its humorous moments, as when Ken Wilson split the puck on the boards or as when Bob Morrish on a lone rush, suddenly put on the brakes at their blue-line.

Morrish moved up to take Sutton's position and was the hardest back checker on the ice.

Don Davis and George Shaw on defence were a hard to beat combination, as our opponents found out.

Ken Young who was moved up from the Fourths for the finals proved himself a promising and versatile player.

Junior School was fortunate in having a fighting coach—Jim Bromley, whose delightful blessings could be heard from one end of the arena to the other.

KEITH ROWNTREE,
Manager.

III HOCKEY TEAM

Back Row: F. Bell, C. Millen, K. Young, M. S. Hannon, V. Stock, S. Waddell, J. Hatten, G. Crawford.
Front Row: L. Kaufman, R. McCombe, L. Sommerville, H. White, J. Winchester.

School 111 Hockey

After much changing around the III Team finally got under way for a most successful season. They went through the entire schedule undefeated and (although this is only whispered around) they also defeated the Senior and Junior School teams.

The playoffs were a sad change when the luck of the draw put the Thirds up against Senior Meds for the first game. Evidently it was just one of those off days (at least so we like to think) because here we took our first and last defeat to the tune of 6-0.

The team had no outstanding stars.

Bob McCombe, who was entirely unknown in the University hockey circle, made a name for himself as a goalie by turning in an outstanding season. The score of the last game was not caused through any fault of his.

Val Stock, an old standby at School showed up better than ever this year when he was teamed up on defence with—

John Hatten, another newcomer to School Hockey, who did a good job of both defending and rushing.

Chuck Miller, who came to us near the end of the season turned out to be one of those natural defencemen. His game against Senior Meds was a pleasure to watch.

Fred Bell, did a good job of holding up the other defence position along with—*Johnny Winchester*, who was handy as an extra defence or forward.

Lloyd Kaufman, *George Crawford* and *Matt Hannon*, who came to us from the Seniors formed a very smooth line and left very little work for the defence to do.

Ken Young, *Brian White* and *Stew Waddell* made up a strong second line who could be used without worry. As a hard fighting, back-checking line they were unequalled.

Lorne W. Somerville,
Manager.

SENIOR BASKETBALL TEAM

Back Row: W. Hall, J. Brant, D. Gibson, P. Gibbs, J. Noble.
Front Row: J. Turner, R. Clare, R. Applebaum, H. Goudy, D. Wright.

Senior School Basketball

The future did not look very bright at the beginning of the season for the blue and gold basketeers with only one regular back from last year. After dropping the first game to P. H. E. the boys came through with a couple of wins over the favoured Meds and Victoria. It was then that people started to take notice of the team and began to realize their possibilities.

Jeff Brant and Bill Hall carried the most of the attack at the start. After a couple of games Jim Turner was "brought up" from the Varsity Blues and he was all that was needed to make our team a definite contender. The above mentioned trio piled up the points while Ross Clare and Pete Gibbs kept the offenders away from our basket. Dave Wright handled the other guard spot in good order. Rube Applebaum and Hank Gowdy made up in fight what they lacked in size to round out the team.

After tying for the group leadership the team entered the playdowns and knocked off all corners, including St. Mike's, conquerors of the mighty "Whiz Kids". Finally they reached the semi-finals with Sr. V. C. This was an off-day for most of the boys and luck seemed to be against them. Down 15 points at half-time they whittled the lead down to 3 points but could not seem to quite overcome it.

This is the third year in a row for this team to hit the semi-finals or finals. Perhaps next year will be ours.

Don Gibson,
Manager.

SENIOR VOLLEYBALL TEAM

Back Row: P. Gibbs, J. Brant, D. Pringle, D. Gibson, K. Tetmar, K. Jones.
Front Row: D. Wright, J. Boa, S. Cooper, S. Moses.

Senior School Volleyball

PRINGLE—Spike—Best volleyballer in the U. of T. Right and left-handed. Knows what to do and when to do it. A great deal of the success goes to Don with a serve all his own. Orchids to you!

GIBSON—Spike—Like basketball one of the best. His height proved most advantageous, actually used to scare opponents. Tried hard to keep his hands on the right side of the net.

GIBBS—Spike—First year in Senior company. Did a very good job; very cunning with a hard spike.

WRIGHT AND TETTMAR—Set-ups for Pringle. Did a good job but couldn't do anything else with Pringle there. Tett's basketball came in very handy for pick-ups off the ground.

BOA AND BRANT—Set-ups for Gibbs. Brant was very reliable but Boa a little erratic, e.g. 13 straight points in one game.

COOPER AND MOSES—Set-ups for Gibson. Cooper was the smallest man on the team—very good on set-ups and pick-ups. Moses, an old timer but still good.

JONES—Just Manager.

JUNIOR VOLLEYBALL TEAM

Back Row: MUNDY, DUNN, HENDRICK, PLATT.
Front Row: HICKS, *(Manager)*; HAMM, CAMPBELL.

Junior School Volleyball

Junior School's team started out this year with hopes of bettering the record of last year's team which reached the finals.

The only trouble they encountered in their group was with the Trinity team, whose experience seemed to outweigh Junior School's will to win. They succeeded in reaching the semi-finals, however, before being knocked out of the running.

The setting up was done by Gil Boa, Hendrick, Fydell, Dunn, Platt and Mundy and these set ups were effectively spiked by Speares, Campbell, Hamm and Kerr.

Considering that many of the players had not played this type of game before, the record is very good, and with these players, next year's Junior and Senior teams will be sure of a good foundation to build on.

R. Hicks,
Manager.

SENIOR BASEBALL TEAM

Back Row: H. Peterson, J. Boa, H. Stricker, J. Farlow, A. Spear, *(Manager)*.
Front Row: S. Moses, N. McLaren, S. Cooper, J. Rettie.
Absent: D. Pringle.

Senior School Baseball

Senior School finished out their schedule this year with one defeat and one tie finishing second in their group. They advanced to the quarter-finals in the play-offs only to be beaten 3-2 in extra innings by Junior School. The team was fairly well balanced but in tight spots they often let Stricker down by lack of hitting or foolish chances on the bases.

The team was built around the pitching and hitting of Herb Stricker and the fielding and hitting of Syd Cooper. "Pete" Peterson was a capable catcher and a fair hitter and Don Pringle was our pitcher and a very good one but due to an akle injury he didn't get in all the games.

The infield consisted of Jack Farlow at first, Jim Boa at second, Cooper at short and Syd Moses at third. All were good fielders and good hitters. The outfield was covered by Jack Rettie and Neil McLaren and although they didn't have a great deal to do in the field they proved their worth at the bat. With a few additions from Junior School and the boys from Third Year who will be back next year we are looking forward to a good season and the capturing of the championship.

AL SPEAR,
Manager.

SENIOR WATERPOLO TEAM

S. Paikin, D. Leitch, P. Quentin, J. Eoa, W. Moffat.
Absent: J. Dempster, J. Northwood, J. Brant.

Senior School Waterpolo

The team looked good on paper but we never really got started. Too bad we didn't get a crack at Junior School. Since they got to the finals they will be hard to get along with.

Bill Moffatt played centre forward and did a great job of getting to the ball first. With his powerful shot he kept the goalie busy even from a distance.

Johnny Northwood being a tough fighter with lots of condition usually got the job of covering the best opponent. Needless to say he kept the opponent busy.

Jimmy Boa, a good swimmer and a real fighter did a swell job as left forward.

Don Leitch is a handy man to have on the team. He makes a good defence player as he is steady and has lots of fight.

Jim Dempster is also a good defenceman who can take a lot of punishment and hand it right back.

Sid Paikin did a good job on defence too.

Jack Shand only played one game, his first and probably his last but he saved the day for us and enabled us to beat Vic.

Warren "Jeff" Brant played a great season in goal. What looked like his fault can be blamed on the rest of the team. He should sue for "non-support".

Pete Quentin as manager accepts the blame for all the mistakes made and the games lost.

PETE QUENTIN,
Manager.

JUNIOR WATERPOLO TEAM

Back Row: G. Carroll, K. Hendricks, G. Boa.
Front Row: W. Kyro, H. Kohl, J. Gray, G. Campbell, J. Martin.
Absent: J. Fydell, D. Mulholland.

Junior School Waterpolo

Gus A. Campbell, Jim Martin, Gil Boa, John Fydell, Don Mulholland, Robert Gray, Walter Kyro, Bob Campbell, Hendricks, Gord Carroll, and manager, Harry B. Kohl.

At the beginning of the season this team consisted of seven men who had never played polo before and the others with only two years' of experience. By regular practices and hard work-outs these men not only learned to play polo but learned how to play with smooth team work. To make up for the experience they lacked the team developed an enthusiasm unlike anything that was expected.

Coming up through the series undefeated they were seldom scored on. This fact was mostly due to the strong active defense by Bob Gray and Don Mulholland plus the spectacular goal-keeping by Gus Campbell, that 6½-foot man who had never played the sport before.

In the attack centre Jim Martin an outstanding swimmer with speedy freshman, John Fydell as swift rover kept the ball up in the opponents' half. Once the ball got up there Gill Boa and myself in wings with centre Jim Martin forming the arrowhead, the result was high scoring for Junior S.P.S.

We went through the season undefeated and took the semi-finals from a strong Victoria Team.

Meeting the Senior Meds A in the play-offs we lost the first game 3-2 with Jim Martin scoring the two.

The second game we walked through with the score of 5-3. Scorers were Jim Martin and myself.

The last game was lost partly due to the loss of John Fydell who was sick and the general upset in the team's organization because of it.

HARRY B. KOHL,
Manager.

SENIOR SWIMMING TEAM

Back Row: N. Lea, P. Aykroyd.
Front Row: W. Moffatt, A. Patterson, J. Northwood, W. Sharpe.
Absent: C. Rimmer, J. Martin, J. Fydell.

School Swimming

The Faculty of Applied Science and Engineering has continued its reign of supremacy in swimming for the fourth consecutive year.

Four swimming teams were entered in the Interfaculty Swimming League. Three of these teams reached the semi-finals where the Juniors eliminated the Third Team to reach the finals against Senior School who were there by a virtue of a win by default against P. H. & E. The Seniors who were completely made up of Varsity team swimmers finally defeated the Juniors 26 to 6.

In the Spring term the Novice meet was dominated by School winning all the events but one. This was followed by School winning the Fitzgerald Trophy, again only losing one event. Thus School has made a very impressive record in the last four years, winning the Junior meet and the Interfaculty championship for the four years and the Fitzgerald Trophy for the last three years.

Almost the whole Varsity Swimming Team was composed of School men. All six men from Senior School swam for Varsity. Pam Lockhart as the sprint man; Walt Sharpe and John Northwood swam backstroke. The middle distance men were Al Patterson and Pete Aykroyd, and Norm Lea was the breaststroke man. Other Schoolmen who swam for the Varsity team were Bill Moffatt from the Thirds and John Fydell and Jim Martin from the Juniors.

As School had so many outstanding swimmers, some others should be mentioned as they would be stars compared to swimmers of other Faculties. Bill Flanagan and Lorne Sommerville represented School in diving; the former won the diving in the Junior Meet. Ken Sharpe and Charlie Rimmer swam breaststroke for School in the Junior and Senior Meet.

E. J. Northwood,
Manager.

BOXING, WRESTLING AND FENCING TEAMS

Back Row: T. Bratty, W. Arthurs, W. Henry, J. Roberts.
Front Row: F. Melvanin, J. Drohan.

B. W. and F.

Engineers have hairy ears parley-vous
Oh Engineers have hairy ears parley-vous
Engineers have hairy ears
Nothing between 'em but fume of beers
Inky-pinky parley-vous.

Once again the hairy eared men won the Davidson Cup, and acquitted themselves most admirably in the two Hart House free-for-alls, the Junior and Senior Assaults.

In the Junior Assault the winning boxers for School were Ginsler 125, Roberts and Burns 145, a draw, Bratty 155 and Henry 175. The winning wrestler for School was Drohan 135.

In the Senior Assault the winning boxers were Ginsler 125, who knocked his man out in the first round, Roberts 145, a very capable boxer, Henry 175 and Cominsky, heavyweight. Mulholland fought very well against Lewis of Meds.

In the Wrestling we were equally successful. Drohan took the 135 with two very quick falls, Melvanin took the 145 easily, Bill Arthurs capped the 165, Tom Newell won the 175 by acclamation and Smith won the heavyweight.

Several of the Seniors are graduating this year and so it is up to you, gang, to fill the vacancies.

Willard G. Henry,
Manager.

JUNIOR BASKETBALL TEAM

Back Row: R. Tredgett, T. Hennessey, R. Hallowell, H. McNiven, *(Manager)*.
Front Row: H. Jones, J. Connell, B. McHenry.

III BASKETBALL TEAM

Back Row: Bill McBride, Al Spear, Don Pringle, *(Coach);* Herb Stricker.
Front Row: (left to right) — Bill Winchester, Charlie Evans, Syd Cooper, Gord Thatcher.

JUNIOR BASEBALL TEAM

Back Row: S. Cooper, *(Manager);* P. Boivin, G. Shaw, J. Bromley, R. McComb.
Front Row: W. Booth, C. Evans, K. Andison, A. Spear, G. Boa.

University of Toronto Contingent C.O.T.C.

The organization of the C.O.T.C., consisting of two battalions, remained essentially the same as in the preceding year, only minor changes being necessitated by differences in the members to be trained. In the First Battalion, training was conducted in the various arms of the service and basic training was conducted in the Second Battalion.

The largest group of Applied Science students selected Engineer training and two companies were formed to accommodate the numbers. These were under the command of Major H. W. Tate and Capt. C. P. Thompson. Applied Science students are to be found, however, in all companies of the First Battalion except the Medical Company. These are as follows: Artillery under Major G. F. Davies, Ordnance Mechanical Engineers under Major W. E. P. Duncan, Signals under Major G. T. Hodgson, Infantry under Major B. E. Tolton and Army Service Corps under Capt. B. Wilkinson. In addition this year Armoured Corps Training was introduced and was added to the syllabus of what was formerly the Machine Gun Company under Capt. E. L. Gibson.

Applied Science students in the Second Battalion received their basic training in S Coy. under Major Tovell and in T. Coy. under Major Horning, E.D. The second Battalion is commanded by Lt.-Col. W. S. Wilson, E.D., who is Assistant Dean and Secretary of the Faculty.

During the year both battalions benefitted by the wider use of training films. Facilities were provided for the instruction and qualification of Cadets as drivers of military vehicles. A number of Applied Science Students are now qualified as drivers in preparation for the work at the annual camp.

Some twenty-seven Applied Science Students took summer courses last summer in R.C.E., R.C.C.S., and Ordnance (O.M.E.) between their third and fourth years. Practically all were given commissions in the Contingent during the past session and were of great assistance in helping with the instruction in the Unit. They will proceed on Active Service on graduation this year. Third year students were interviewed recently and a number will be selected for similar courses this Summer.

The Officer Commanding the Contingent is Lt.-Col. H. H. Madill, V.D., who is Head of the School of Architecture in the Faculty and the Chief Instructor of the First Battalion, Major M. B. Watson, E.D., is a graduate in Mechanical and Electrical Engineering.

University Naval Training Division

The University Naval Training Division of the University of Toronto was formed in the Spring of 1943 by Naval Service Headquarters for the purpose of preparing students for eventual service with the Royal Canadian Naval Volunteer Reserve. Students enrolled in the U.N.T.D. are attested on Divisional Strength in the R.C.N.V.R.; that is, they are enrolled for the Duration of Hostilities.

There are approximately 300 students in the U.N.T.D., of which number 250 are serving their first year of naval training. Engineering undergraduates comprise 127 of the total enrolment. U.N.T.D. students are part of the complement of H.M.C.S. *York*, and their administration and discipline are under the Commanding Officer, H.M.C.S. *York*.

Students in Mechanical Engineering, Electrical Engineering, Engineering Physics and Mathematics and Physics Courses are enrolled as Stokers Second Class. With the exception of Medical and Dental students, those in other University Courses are enrolled as Ordinary Seamen.

Third year Engineer students who are selected by an Officer delegated by Naval Service Headquarters, will be taken on Active Service for the Summer months. They will proceed for training under the Engineering Branch of the Navy upon completion of their University Year and after their regular two weeks' Spring training. These ratings will be temporarily rated Acting Fourth Class Artificers, for pay purposes only, to assist in financing their forthcoming University term. Although Artificers, they will continue to wear the uniform of Stoker Second Class, and upon their return to the University for the Fall term will revert to Stoker ratings.

The 110 hours training in the U.N.T.D. is divided into three parades a week, Wednesday, Friday and Saturday afternoons. The Wednesday and Friday parades are taken up by lectures and signals which are held in the Chemistry Building. The studies include Naval Discipline, Customs of the Service, Tactics and Operations, Morse Code and Semaphore. The Saturday afternoon parades are held at H.M.C.S. *York* and include field training, boatwork, compass and helm and bends and hitches.

The Ship's Office of the U.N.T.D. is located in Room "A" at Hart House with the following in charge:

Area Commanding Officers, A/Commander J. J. Connolly; Commanding Officer, Lieut.-Commander (SB) D. A. F. Robinson; Divisional Officers, Sub-Lieut. G. H. Cameron; Sub-Lieut. G. A. Burrows.

No. 3 University of Toronto Squadron University Air Training Corps Royal Canadian Air Force

Engineering undergraduates made up 50% of this year's 210-man enrolment in the University Air Training Corps. The Corps is a component of the Royal Canadian Air Force and the students enlisted with the formation are receiving air-force training during the period of their university course. Of these Schoolmen who enlisted, approximately 35% are technical personnel, and the remainder are air crew.

The syllabus of training during the academic year called for instruction in subjects which include Mathematics, Navigation, Signals, Drill, Aircraft Recognition, Airmanship, Theory of Flight, Air Force Administration, Law, Discipline, etc. The training was followed by two weeks in Summer Camp, at an R.C.A.F. Station of which several hours were allotted to examinations.

Last year after a two weeks period of training at R.C.A.F. Stations 62% of the squadron went on active service. The record of final training of those who "joined up" is not complete as yet but the results known show that these men will stand high in their classes on graduation for Wings. Members of the Corps were given credit for their U.A.T.C. training when they left the University to undertake active service with the R.C.A.F.

The Squadron of the U.A.T.C. established at the University of Toronto is known as No. 3 (University of Toronto) Squadron, University Air Training Corps, R.C.A.F. Its orderly room is located immediately east of the Debates Room in Hart House. Its organization of headquarters staff is as follows:

Commanding Officer, Wing Commander T. R. Loudon, V.D., R.C.A.F. Reserve; Administrative Officer, Flight Lieutenant J. A. Guymer, R.C.A.F. (Sr.); Clerk (Admin.), Warrant Officer 2 Robertson, A. W. P., R.C.A.F. (Sr.); Disciplinarian, Flight Sergeant Downsey, W.C., R.C.A.F. (Sr.); Disciplinarian, Sergeant Keys, C. R., R.C.A.F. (Sr.).

AUTOGRAPHS